SANYO

M9970K

MODEL

SERVICE MANUAL

SERVICE MANUAL

CASSETTE RECORDER

SANYO

M9994LU

(EUROPE)

SPECIFICATIONS

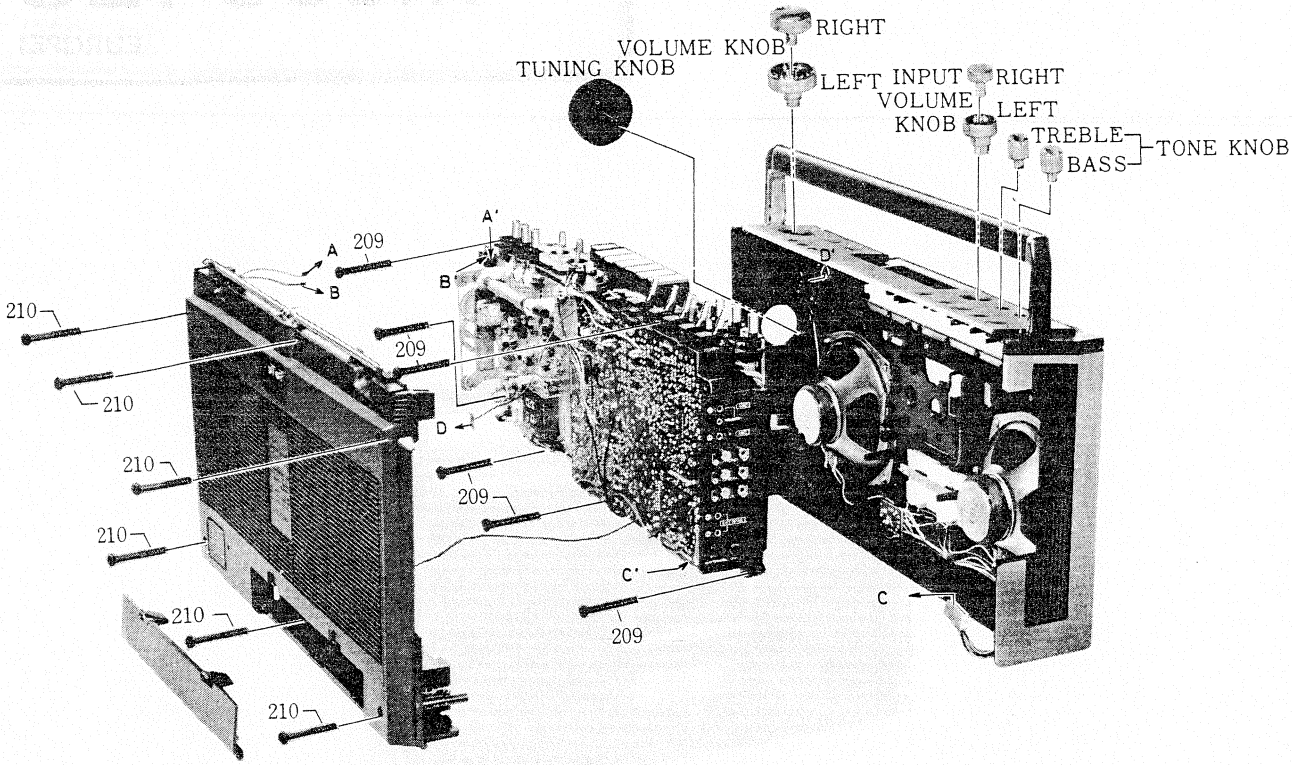
Recording system	AC bias, 4 tracks stereo
Erasing system	AC erase
Tape speed	1-7/8 i.p.s. (4.75 cm/s)
Rewind and fast forward time	Rewind: 2 min. (C–60) Fast forward: 2 min. 20 sec. (C–60)
Frequency range	FM : 87.5 – 108 MHz AM : 530 – 1605 kHz LW : 150 – 350 kHz SW : 5.95 – 18 MHz
Terminal impedance	EXT. MIC: 5k ohms (0.3mV) PHONO: 50k ohms (3mV) REC/PB (input) 3k ohms (0.3mV) (output) 1k ohms (0.7V) EXT SP: 2.5 – 8 ohms HEADPHONES: 8 ohms
Frequency response	50 – 15,000Hz (CrO_2) 50 – 15,000Hz (FeCr) 50 – 14,000Hz (NORMAL)
Output power	7W x 2 maximum
Power source	DC: 12V "D" (UM–1) x 8 12V Car battery AC: 115/230V 50Hz
Dimensions	20-3/8" (W) x 5-1/4" (D) x 12-1/16" (H) (516 x 131 x 306 mm)
Weight	Approx. 16 lbs. 12 ozs. (7.6 kg) including batteries

* Specifications subject to change without notice.

DISASSEMBLY OF CABINET & CHASSIS

As a precautionary measure, be sure to unplug the power cord from the AC outlet and take the batteries out of the battery compartment.

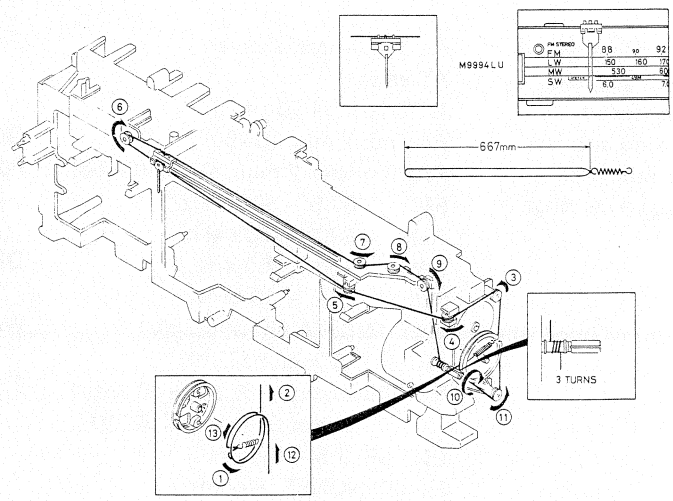
1. Remove the six screws (210, pan head tapping 3 x 35 mm) of the rear cover.
2. Antenna socket is disconnected from the printed circuit board.
3. Detach the following knobs: volume (24, 25), input volume (26, 27) tone controls (28), and tuning (33).
4. Remove the six screws (209, pan head tapping 3 x 30 mm).
5. Disconnect the socket (107) on chassis and pull the chassis to the fore and upward, and it will come out of the cabinet.



209 : SCREW PAN HO. TAPPING 3×30mm
210 : SCREW PAN HO. TAPPING 3×35mm

STRINGING DIAL ROPE

1. Preparation
   Tie rope to a spring coil (68). The rope should be 667mm in length when folded into two parts as shown below.
2. Stringing procedure
   Put the rope round the drum in the direction marked by the arrow (1), stretch it as indicated by the arrow (2), pass it along (3)→(4)→(5)→(6)→(7)→(8)→(9), wind it around the tuning shaft three times at (10), and run it along (11)→(12)→(13).



3. Adjustment of dial pointer position.
   Turn the tuning shaft counterclockwise until the dial rope slips on it. Set the pointer to the graduation at the extreme left on the FM scale and fix the pointer on the rope.

TORQUE ADJUSTMENT

1. Set the unit to the PLAY, FAST FORWARD or REWIND mode.
2. Measure the each torque with a torque gauge. They should be as following;

PLAY	35 – 60 g/cm
FAST FORWARD	60 – 100 g/cm
REWIND	65 – 100 g/cm

3. If the each torque fails to reach the standard value. Clean the drive belt, flywheel, motor pulley, take-up reel, idler and rewind roller with a cotton swab soaked in alcohol.

PINCH ROLLER ADJUSTMENT

1. Set the unit the Play mode.
2. Apply a tension gauge (500 gr) to the pinch roller and measure the pressure. The gauge reading should be within the range 300 – 400 gr.
3. To adjust the contact pressure, bend the spring or change the spring with a new one, if necessary.

ADJUSTMENT OF STAND-BY MECHANISM (RESULTANT FORCE OF LOCK-LEVER SYSTEM)

The lever of the slide (445) has to be unlocked with the revolving shaft of the pulley (443) kicking it before the stand-by mechanism works. Employ a spring gauge capable of measuring a force of up to 110 g for making this adjustment.

Resultant force of lock-lever system ..... 100g or smaller

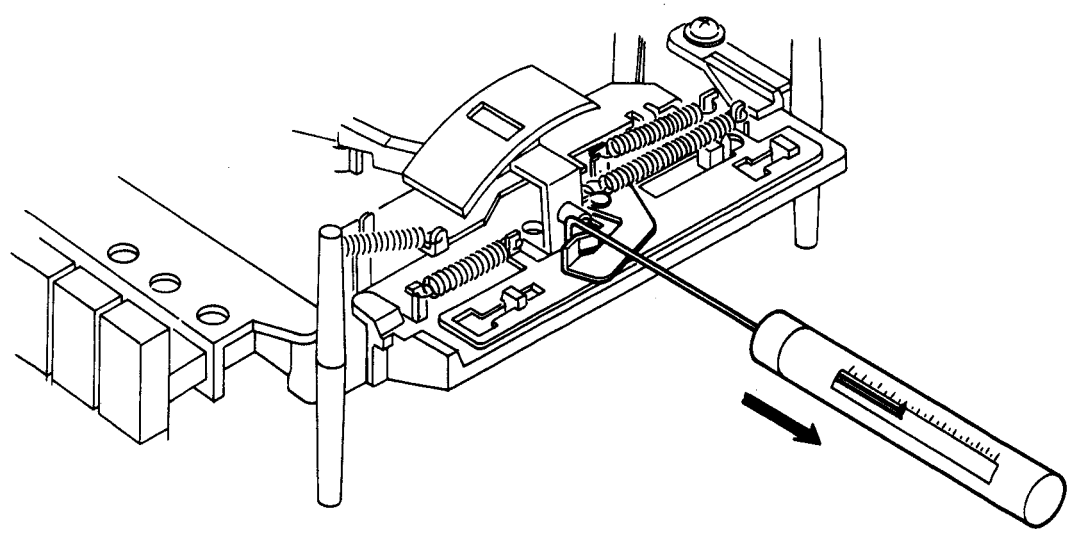
In the event that the resultant force is larger than the above specification, adjust by bending or replace the spring coil 331 (141-2-851T-56100).

TAPE SPEED ADJUSTMENT

1. Connect a frequency counter to the Ext. Speaker jack.
2. Mount a 3 kHz test tape on the unit and play it back. Turn the potentiometer inside the motor and adjust it until the counter reading becomes 2970~3020Hz.

HEAD AZIMUTH ADJUSTMENT

1. Mount a music tape on the unit for the reproduction of tape. Insert the screw driver (+) to azimuth hole, and turn the azimuth adjusting screw until to the maximum sound.



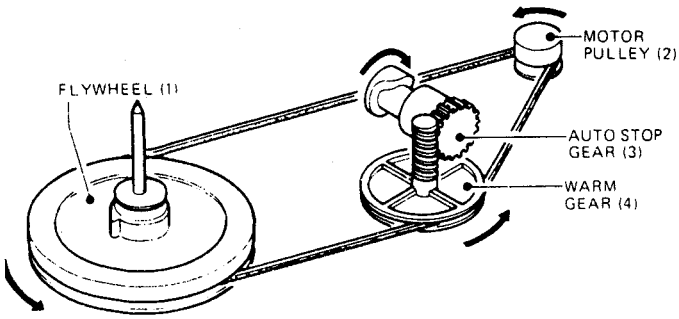
\UTO STOP MECHANISM

Read this section in reference to the mechanical exploded view on Page 14 & 15)

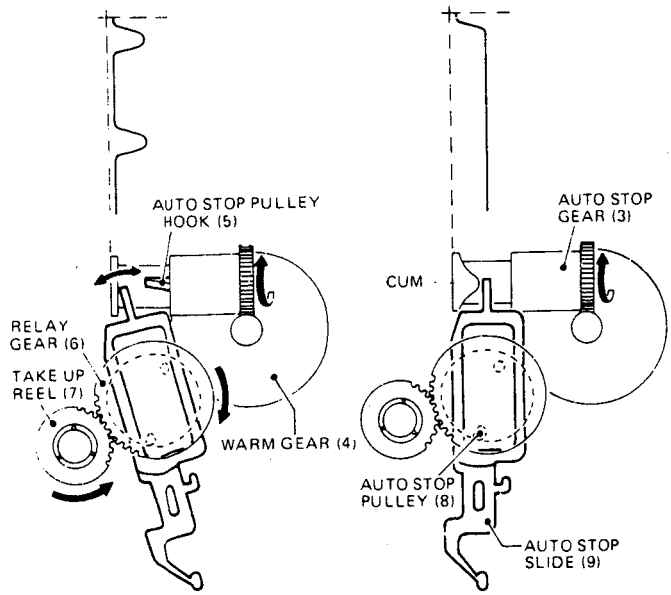
'heory of operation

/hen the end of tape has been reached in the REC or PLAY mode, the LAY button is unlocked and operation stops automatically.

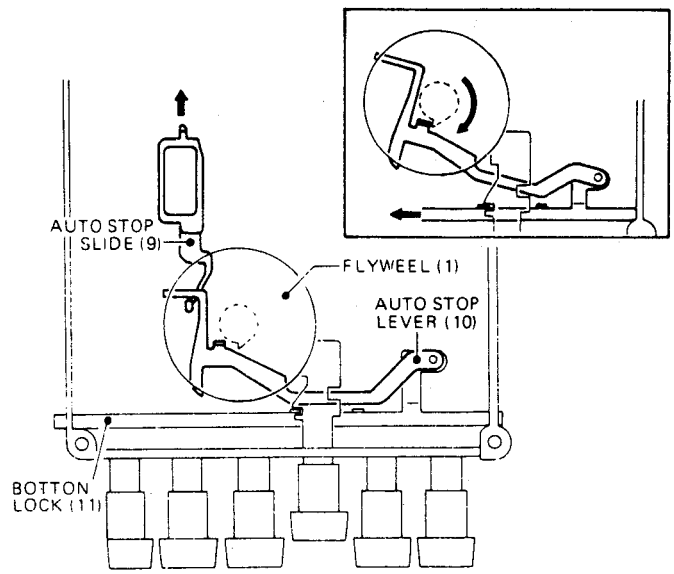
. Auto stop and worm gears (3) (4) keep revolving while the motor is running.

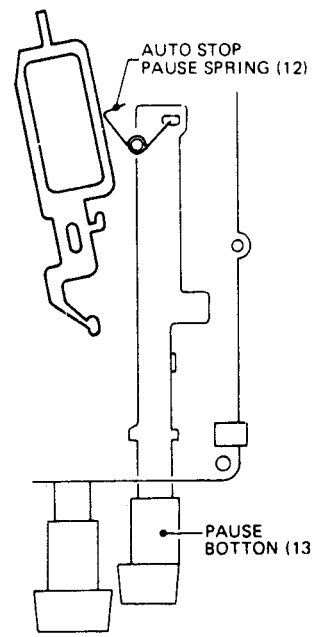


2. While the tape is running
   1) Take-up reel (7) causes relay gear (6) to turn. Auto stop pulley mounted on the shaft of relay gear (6) also turns in the same direction.
   2) While flywheel (1) is turning, it keeps the rear end of auto stop slide (9) moving on the cam of auto stop gear (3). Therefore, it does not become engaged with hook (5) on auto stop pulley (8), so the auto stop mechanism does not work.
3. When the tape end has been reached
   1) Take-up reel stops revolving. So does the rear end of auto stop slide (9).
   2) Hook (5) on auto stop pulley (8) catches the rear end of auto stop slide (9) which is pulled toward the motor, unlocking the PLAY button.



4. When the PAUSE button is locked
   Auto stop pause spring (12) keeps pushing the rear end of auto stop slide (9) against the cam of auto stop gear (3). Accordingly, the rear end of auto stop slide (9) moves on the cam and remains out of reach of hook (5) on auto stop pulley (8). Thus, the auto stop mechanism does not work.





ADJUSTMENT OF AMPLIFIER SECTION

PREPARATION

All necessary adjustments should be made at a source power voltage of DC12V.

Turn the TONE controls (BASS and TREBLE) to their center positions and the INPUT VOLUME controls (left and right channels) to their maximum settings.

The settings of other controls are as follows:

Function switch	(FUNCTION 1) → TAPE
Input line switch	(FUNCTION 2) → DIN
Tape selector	(TAPE) → NORMAL

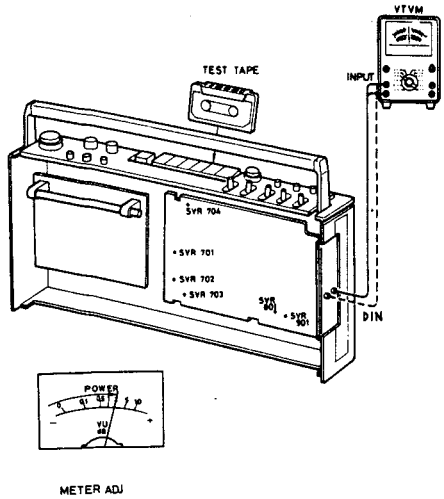
ADJUSTMENT OF PLAYBACK GAIN

Playback test tape (1 kHz, 0dB) and adjust SVR701 (50KB) to equalize outputs at DIN OUTs for the left and right channels.

ADJUSTMENT OF METERS

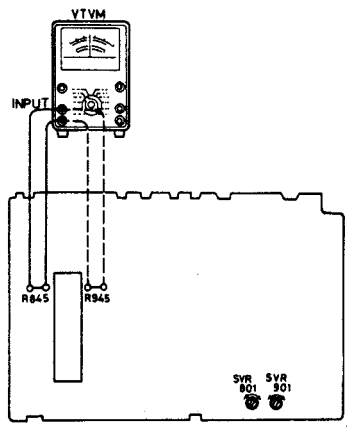
Conditions: Loudness → OFF
Automatic level control (ALC) → ON
Mode selector (MODE) → STEREO

Playback test tape (1kHz, 0dB) and turn the volume control (VOLUME) until the reading of the meter for the right channel becomes 2W (0VU). Adjust SVR703 until the meter readings for the left and right channels become identical.



ADJUSTMENT OF BIASES

Mount blank tape and set the unit in the recording mode, while connecting a VTVM to the 10-ohm terminals of R845 and R945. Adjust SVR801 and SVR901 until the VTVM stands at 2.5mV.

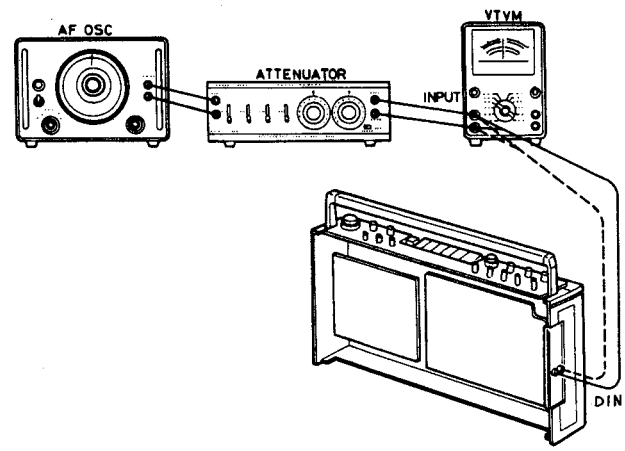


ADJUSTMENT OF RECORDING GAIN

Conditions: Loudness → OFF
Automatic level control (ALC) → OFF
Volume controls (VOLUME) → MIN.
Mode selector (MODE) → STEREO

Insert blank tape, set the unit in the recording mode and apply 1kHz–73dB (0.35mV) signal to the DIN jacks.

Connect a VTVM to the collectors of Q807 and Q907 and adjust SVR 702 until left- and right-channel outputs become identical.

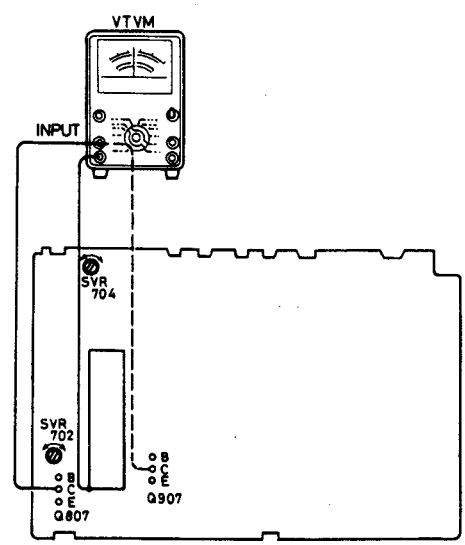


ADJUSTMENT OF ALC

Conditions: Loudness → OFF
Automatic level control (ALC) → ON
Volume controls (VOLUME) → MIN.
Mode selector (MODE) → STEREO

After finishing with adjusting the recording gain as instructed in (4) above, insert blank tape, set the unit in the recording mode, and apply 1kHz–43dB (11V) signal to the DIN jacks.

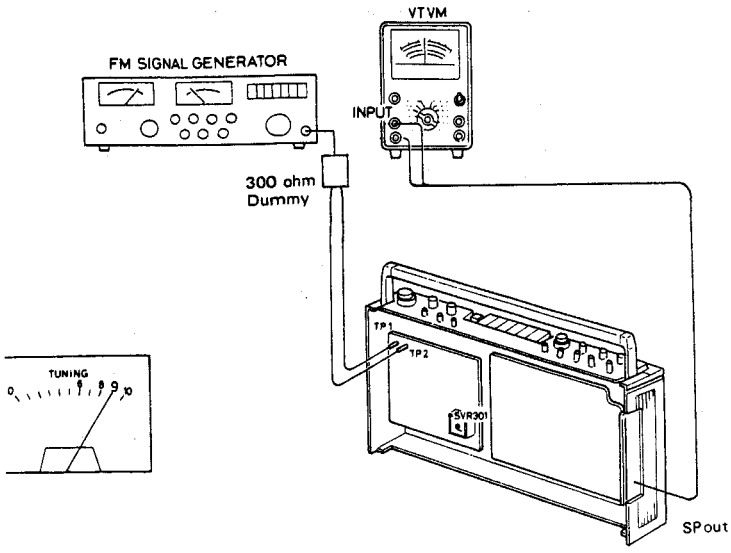
Connect a VTVM to the collectors of Q807 and Q907. Adjust SVR704 to obtain identical outputs from the left and right channels.



ADJUSTMENT OF TUNER SECTION

ADJUSTMENT OF TUNING METER

Connect the FM signal generator thru 300-ohm dummy to TP1 and TP2, and tune in the generator signal. Adjust the generator to increase the input signal to such an enough level as a pointer deflects over a maximum indication on the tuning meter. Then, adjust SVR301 to have the pointer read 9.0.



ADJUSTMENT OF FM MULTIPLEX

(1) Set SVR501 (10KB) to its center position.

(2) Adjust the modulation of the FM signal generator, using a stereo modulator. *Modulation frequency = 400Hz

Pilot signal	7.5kHz dev. (10% modulation)
Stereo signal	Main signal 22.5kHz dev. (30% modulation)

NOTE:
Adjustment of modulation varies according to the type of instrument in use. You are encouraged to know fully well the operation of the instrument you are employing.

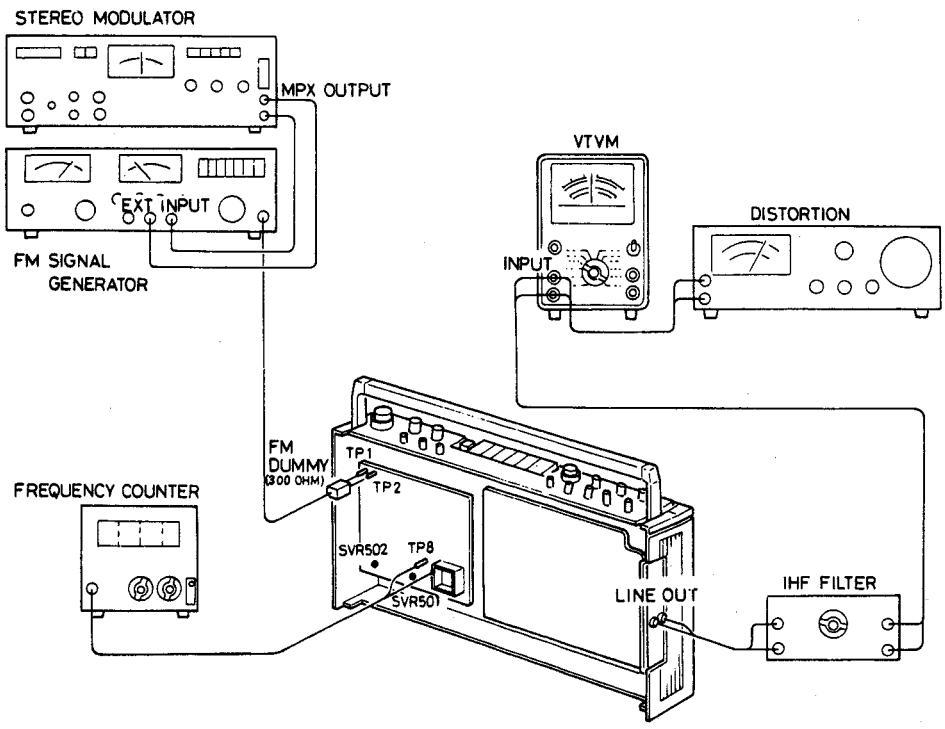
(3) Connect an IHF filter (200~15kHz) to the left-channel LINE OUT. Connect the filter to a VTVM.

(4) Set the output signal switch of the stereo modulator to MAIN (L+R). Set the unit to receive a radio frequency of 98MHz and tune, using the FM signal generator.

(5) 19kHz adjustment (VCO adjustment)
Set the radio unit so there is no input in the FM stereo mode. Connect a frequency counter to TP3 and make necessary adjustment by means of SVR501 (10KB) so that the counter reading becomes 19kHz ± 100Hz.
*HOT side of frequency counter: TP3
GROUND side (E): shield case

(6) Separation adjustment
1) Connect a 300-ohm dummy load to an FM signal generator and the dummy load to the unit, to TP1 and TP2.
2) Set the output signal switch of the stereo modulator to MAIN (as in Section (4) above) and supply pilot signal.
3) Set the BASS and TREBLE controls to their center positions and regulate the stereo signal input to 66dB. Then, reduce the distortion factor to a minimum by tuning, using the radio tuning control or by means of the FM signal generator.
4) Adjustment of left-channel separation
Set the output signal switch to RIGHT and minimize leakage of right-channel signal into the left channel by adjusting SVR502 (500B).
5) Adjustment of right-channel separation
Reconnect the cord from the IHF filter from the LEFT to RIGHT LINE OUT jacks, set the output signal switch to LEFT and minimize leakage of left-channel signal into the right channel by adjusting SVR502 (500B).
6) In case the minimum signal leakage positions of SVR502 adjusted as instructed in Sections (4) and (5) differ from each other, determine its optimum position within a range that satisfies the specified separation value (20dB or higher) for each of the two channels.

* In the above-described steps of adjustment, tuner output is taken out at LINE OUT. The IHF filter (BANDPASS 200~15000Hz) can be dispensed with when connections are made to EXT-SP.

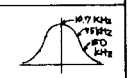
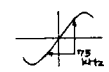


MW ADJUSTMENT

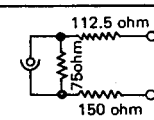
Step	Adjusting Circuit	Connections		SG frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	I.F.T.	Connect sweep generator to Test Loop.	Connect oscillo-scope to EXT. SP terminals	460KHz (400 Hz 30% modulation)	Low end of dial scale. At position of un-required signal.	T304, T305 T306	MAX.
2	O.S.C.	Connect AM SG to Test Loop.	Connect VTVM to speaker terminals.	505 KHz (400 Hz 30% modulation)	Low end of dial scale	L111	MAX.
3				1650 KHz (400 Hz 30% modulation)	High end of dial scale	CT6	
4	ANT.	Connect AM SG to Test Loop	Connect VTVM to speaker terminals.	600 KHz (400 Hz 30% modulation)	600 KHz on dial scale	L109a	MAX.
5				1400 KHz (400 Hz 30% modulation)	1400 KHz on dial scale	CT5	
6	Repeat adjustments.						

PREPARE:
1. Set the dial pointer to very left line of dial scale.
2. Connect sweep generator, AM SG, VTVM and oscilloscope.
3. Selector switch to "MW"
4. Use a screwdriver with plastic grip for all adjustments.

FM ADJUSTMENT

Step	Adjusting Circuit	Connections		SG frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	I.F.	Connect sweep generator to FM TP1 & TP2	Connect oscillo-scope to test point TP6, R319(H) Shield cast (E)	10.7 MHz (0% modulation)	Near max. capacity of VC. at position with unrequired signal.	T301, T302	
2	Ratio Det.		Connect oscillo-scope to test point TP7, R324(H) Shield case (E)			T303	
3	O.S.C.	Connect FM SG to TP1 & TP2	Connect VTVM to speaker terminal.	87.25 MHz (400 Hz 30% modulation)	Low end of dial scale	L107	MAX.
4				109.0 MHz (400 Hz 30% modulation)	High end of dial scale	CT2	
5	ANT.	Connect FM SG to TP1 & TP2	Connect VTVM to speaker terminal.	90.0 MHz (400 Hz 30% modulation)	90.0 MHz on dial scale	L105	MAX.
6				106.0 MHz (400 Hz 30% modulation)	106.0 MHz on dial scale	CT1	
7	Repeat adjustments.						

PREPARE:
1. Set the dial pointer to very left line of dial scale.
2. Connect sweep generator, FM SG, VTVM and oscilloscope. FM antenna input impedance is 300 ohm.
3. Use a screwdriver with plastic grip for all adjustments.
4. AFC switch OFF.
   * Because an AFC is incorporated, FM tracking and frequency coverage adjustments have to be made. Use a small input (about 10dB) for this purpose.



LW ADJUSTMENT

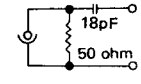
Step	Adjusting Circuit	Connections		SG grequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	OSC	Connect AM SG to Test Loop.	Connect VTVM to speaker terminals.	145 kHz (400 Hz 30% modulation)	Low end of dial scale	L112	Max.
2				365 kHz (400 Hz 30% modulation)	High end of dial scale	CT4	
3	ANT.	Connect AM SG to Test Loop.	Connect VTVM to speaker terminals.	160 kHz (400 Hz 30% modulation)	2.5MHz on dial scale	L109b	Max.
4				340 kHz (400 Hz 30% modulation)	6.5MHz on dial scale	CT3	
5	Repeat adjustments.						

PREPARE:
1. Set the dial pointer to very left line of dial scale.
2. Connect sweep generator, AM SG, VTVM and oscilloscope.
3. Selector switch to "LW".
4. Use a screwdriver with plastic grip for all adjustments.
5. Set the Fine Tuning to mechanical center.

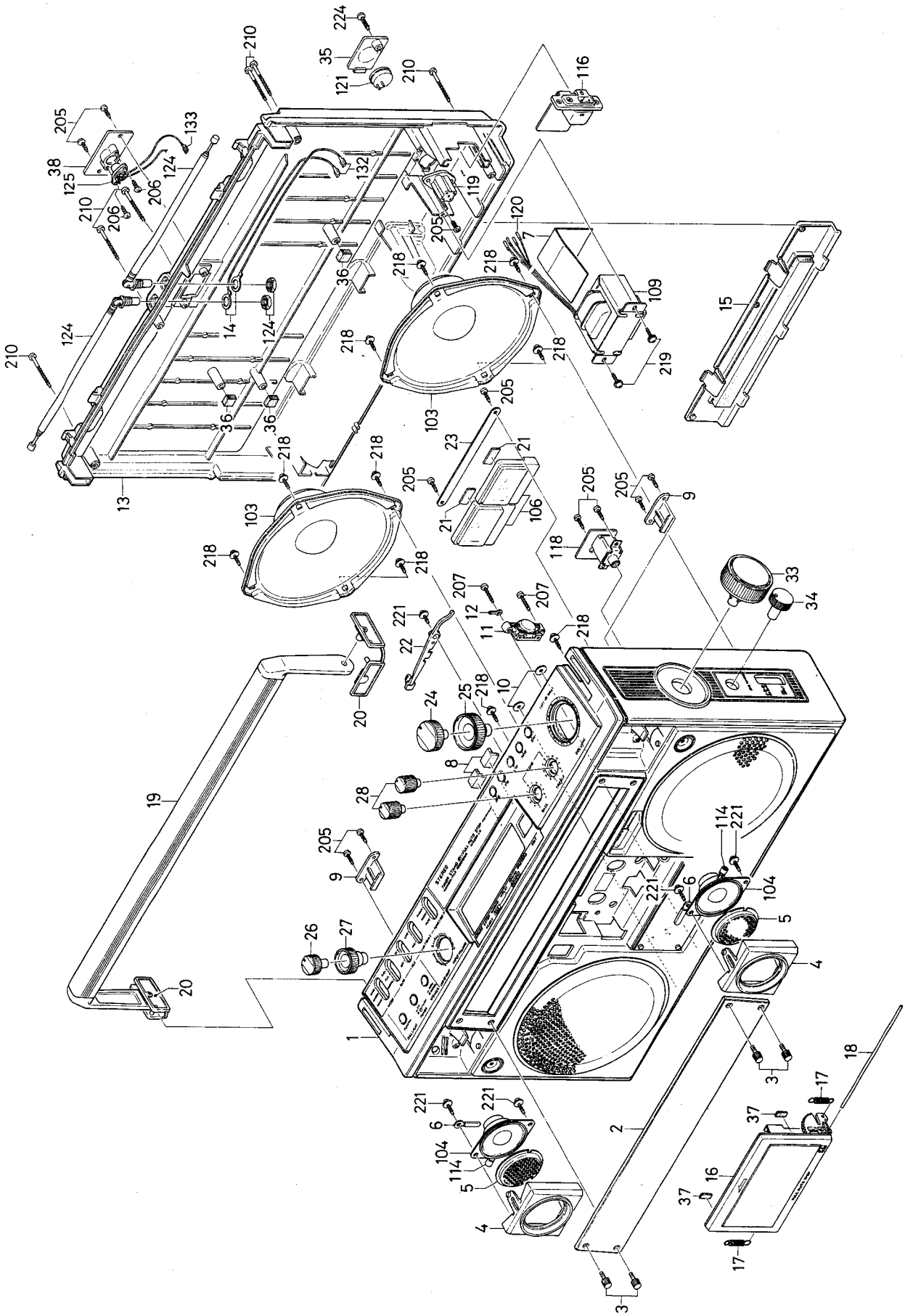
SW ADJUSTMENT

Step	Adjusting Circuit	Connections		SG grequency	Position of tuning dial	Adjustment	VTVM Oscilloscope
		Input	Output				
1	OSC	Connect AM SG to ANT terminal through IRE dummy.	Connect VTVM to EXT. SP. terminals.	5.8 MHz (400 Hz 30% modulation)	Low end of dial scale.	L110	Max.
2				19.0 MHz (400 Hz 30% modulation)	High end of dial scale.	CT8	
3	ANT.	Connect AM SG to ANT terminal through IRE dummy.	Connect VTVM to EXT. SP. terminals.	7.0 MHz (400 Hz 30% modulation)	7.0MHz on dial scale.	L108	Max.
4				18.0 MHz (400Hz 30% modulation)	18.0MHz on dial scale.	CT7	
5	Repeat adjustments.						

PREPARE:
1. Set the dial pointer to very left line dial scale.
2. Connect signal generator to dummy antenna.
3. Use screwdriver with plastic grip for all adjustments.
4. Selector switch to "SW2".
5. Set the Fine Tuning to mechanical center.
6. Use a Dummy antenna as follow.



EXPLODED VIEW

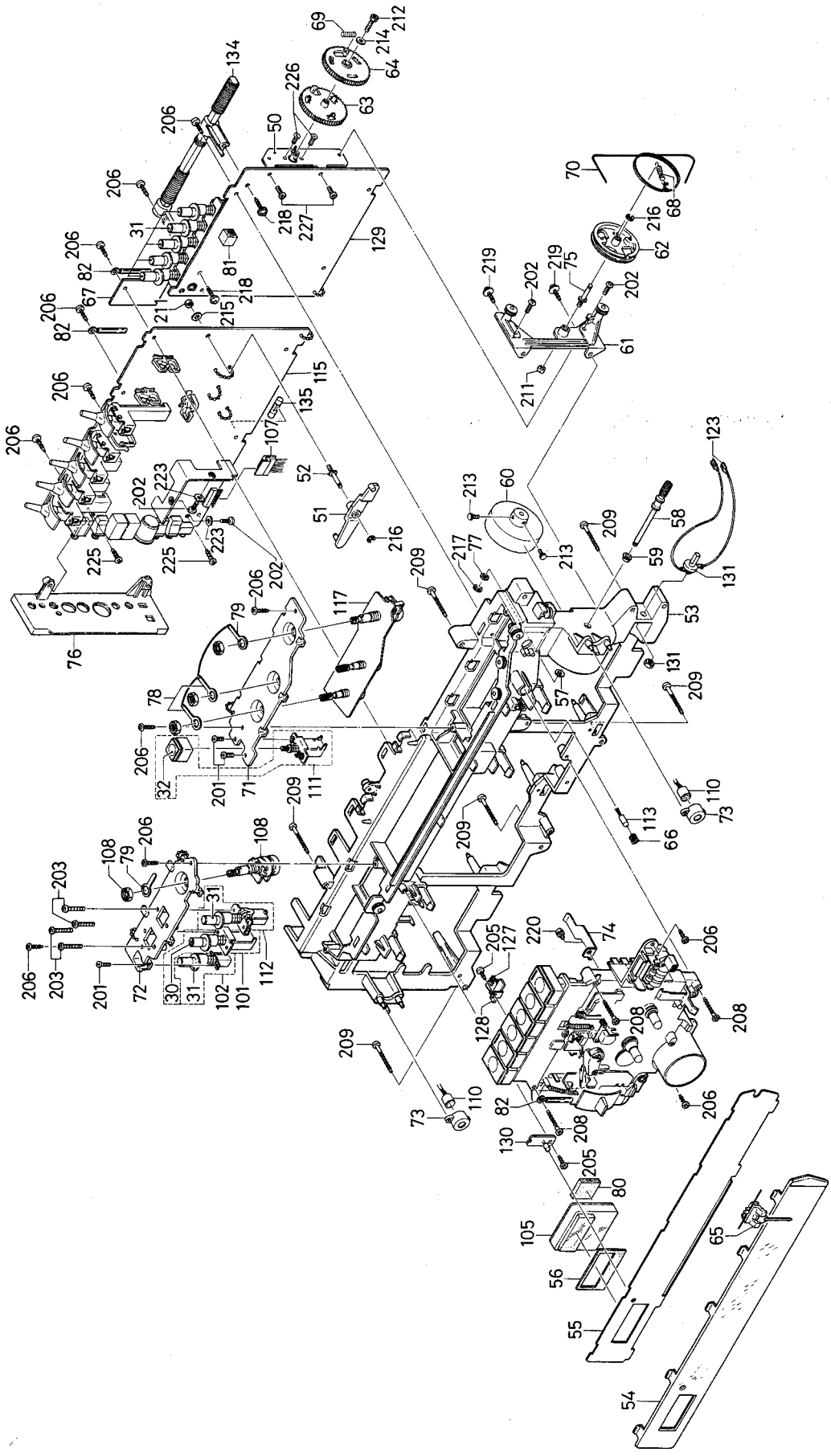


PARTS LIST

Key No.	Parts No.	Description	Q'ty
	PACKING		
	141 6 132T 90403	Individual Carton, Set	1
	141 6 410T 14103	Instruction Book	1
	141 6 144T 47100	Foam Plastic Case	1
	141 6 144T 47200	Foam Plastic Case	1
	141 6 231T 55700	Inner Polye Cover, Set	1
	141 6 231T 20350	Inner Polye Cover, Inst B	1
	141 6 231T 20300	Inner Polye Cover, Mic	2
	141 6 231T 10200	Inner Polye Cover, Mic Stand	2
	141 0 385T 02900	Bracket Mic Assy	2
	141 6 132T 90300	Individual Carton, Mic	1
	141 6 415T 23300	Notice, Swedish	1
	141 6 316T 99000	Pad, Handle	1
	141 2 171T 09500	Handle	1
	141 2 246T 33500	Sheet, Cabinet	1
	141 6 478T 13100	Sticker, Top Lid	1
	ACCESSORIES		
	4 243T 77900	Power Cord	1
	4 241T 12671	Cassette Tape C-12	1
	4 153T 10700	Microphone, without Remote	1
	4 153T 10800	Microphone, with Remote	1
	CABINET		
1	141 0 111T 35002	Cabinet Assy	1
2	141 2 131T 16000	Clear Window	1
3	141 2 210T 07300	Bracket	4
4	141 0 117T 04200	Speaker Box Assy (141-9-117T-00300)	2
5	141 2 153T 40200	Escutcheon	2
6	123 2 472R 00601	Lug	2
7	141 2 322T 45500	Shield Plate	1
8	141 2 447T 46200	Cushion	3
9	141 2 210T 09000	Bracket	2
10	141 2 453T 01000	Washer 3x12x1, Fiber	2
11	141 0 581T 10900	Gear Assy (141 0 581T 01200)	1
12	123 2 472R 00401	Lug	1
13	141 0 126T 23604	Back Lid Assy	1
14	123 2 472R 11100	Lug	2
15	141 0 128T 12300	Battery Lid Assy (141 9 128T 04101)	1
16	141 0 124T 20203	Top Lid Assy	1
17	141 2 855T 06200	Spring Coil	2
18	141 2 751T 39900	Shaft	1
19	141 0 171T 13700	Handle Assy (141 0 171T 08800)	1
20	141 2 271T 14600	Bracket, Handle	2
21	141 2 447T 65000	Cushion, VU Meter	2
22	141 2 742T 10500	Lever	1
23	141 2 373T 06200	Bracket, Mater	1
24	141 2 163T 49400	Rotary Knob, Main VR, Upper	1
25	141 2 163T 49500	Rotary Knob, Main VR, Lower	1
26	141 2 163T 49600	Rotary Knob, Input VR, Upper	1
27	141 2 163T 49700	Rotary Knob, Input VR, Lower	1
28	141 2 163T 49800	Rotary Knob, Tone	2
30	141 0 161T 51701	Push Button Assy, Power	1
31	141 0 161T 51700	Push Button Assy, Band	1
32	141 0 161T 51800	Push Button Assy, Editer	1
33	141 2 163T 50400	Rotary Knob, Tuning	1
34	141 2 163T 53200	Rotary Knob, Fine Tuning	1
35	141 2 132T 03800	Sign Window, Voltage Select	1
36	141 2 447T 16100	Cushion 10x10x5T, Back Lid	3
37	141 2 447T 65400	Cushion 6x12x2T, Top Lid	2
38	141 2 367T 31300	Bracket Socket, EXT. SP	1
	CHASSIS		
50	141 2 363T 07200	Bracket, VC	1
51	141 2 742T 15000	Lever, Rec	1
52	123 2 566R 12000	Tuning Shaft	1
53	141 0 311T 28200	Chassis Assy (141 9 311T 07000)	1
54	141 0 146T 16803	Dial Scale Assy	1
55	141 2 245T 05000	Back Plate	1
56	141 2 446T 06600	Plastics Cushion, Tuning Meter	1
57	141 2 453T 30500	Washer 4.1x6.5x0.13, Nylon	1
58	141 2 566T 07400	Tuning Shaft	1
59	141 2 573T 08400	Bracket, Tuning Shaft	1
60	141 2 521T 01900	Flywheel	1
61	141 0 210T 07600	Bracket Assy, Drum	1
62	141 2 538T 08900	Drum	1

Key No.	Part No.	Description	Q'ty
	CHASSIS		
63	141 2 581T 11000	Gear	1
64	141 2 581T 11100	Gear	1
65	141 0 511T 13300	Pointer Assy (141 0 511T 04500)	1
66	141-2-447T-46200	Cushion, PL	1
67	141-2-327T-18000	Insulator, AMP PCB Mfg.	1
68	141 2 851T 06300	Spring Coil, Rope	1
69	141 2 855T 26100	Spring Coil, Gear	1
70	141 2 340T 00200	Rope	1
71	141 2 361T 14100	Bracket Resistor, Main VR	1
72	141 2 361T 14200	Bracket Resistor, Input VR	1
73	141 2 385T 02200	Bracket, Mic	2
74	141 2 853T 55400	Spring Plate, Rec	1
75	123 2 566R 12000	Tuning Shaft	1
76	141 0 367T 31400	Bracket, Socket Assy	1
77	141 2 453T 31701	Washer 4x8x0.5 Nylon	1
78	141 2 472T 07300	Lug	2
79	141 2 472T 07200	Lug	2
80	141 2 447T 45501	Cushion, Tuning Meter	1
81	141 2 447T 16200	Cushion	1
82	141 2 323T 00300	Shield Box, Motor	1
83	141 6 479T 26102	Label, Motor Shield Box Mfg.	1
84	141 2 184T 02200	Tape, Motor Shield Box Mfg.	1
	ELECTRICAL PARTS		
101	4 231T 76220	Switch, Power	1
102	4 231T 75020	Switch, Dial Light	1
103	4 151T 27200	Speaker 16cm	2
104	4 151T 17873	Speaker 5cm Tweeter	2
105	4 511T 09200	Meter, Tuning / Battery	1
106	4 511T 09300	Meter VU/Watt	2
107	4 235T 56200	Socket 9P	1
108	4 222T 64600	Variable Resistor 10K-A, Input	1
109	4 251T 84200	Power Trans	1
110	4 153T 10500	Microphone	2
111	4 231T 53720	Switch, Edigi	1
112	4 231T 74920	Switch, Mix	1
113	4 612T 10874	Pilot Lamp 9V 100mA	1
114		Electrolytic Cap. 4.7μF 25V Nonpolar (C839, 939)	2
119	4 235T 33200	Socket, Voltage Select	1
120	141 2 382T 03100	Terminal, Voltage Select	4
121	4 236T 09906	Plug Assy, Voltage Select	1
123	4 235T 34600	Socket, Ant	2
124	4 244T 03100	Telescopic Rod Ant	2
125	4 235T 56500	Socket, FM AM EXT. ANT	1
127	4 252T 06600	RF Choke 80μF	1
128	4 237T 05800	Terminal Board	1
131	4 224R 20700	Fine Tuning	1
132	4 243T 12801	Lead	1
133	4 243T 12802	Lead	1
134	4 257T 29101	Antenna Coil, MW LW	1
135	4 234T 06171	Fuse 2.5A	1
	AMP PCB ASSY		
115	141 4 230T 64600	P.C. Board Assy, AMP	1
	4 231T 74300	Switch, Mono-Stereo-Wide	1
	4 231T 74400	Switch, FE-FEcr-CR_{02}	1
	4 231T 74500	Switch, Tape-Radio-Phone	1
	4 231T 74600	Switch, Rec-Play	1
	4 231T 74700	Switch, ALC, Mic-Line	2
	4 235T 56600	Socket, Phono Output	1
	141 2 464T 30300	Fixer	1
	4 231T 65200	Switch, Beat	1
	4 222T 39578	Variable Resistor, 100K (B) Bias Adj.	2
	4 222T 39577	Variable Resistor, 50K (B) Play Gain	1
	4 222T 39578	Variable Resistor, 100K (B) Rec Gain	1
	4 222T 39578	Variable Resistor, 100K (B) Watt Meter Adj.	1
	4 252T 08300	Choke, Bias Trap 15mH	2
	4 252T 03700	Choke, 4.7μH	2
	4 236T 10576	Plug 9P	1
	4 258T 20201	OSC Coil Assy	1
	141 0 162T 14000	Lever Knob Assy	5

EXPLODED VIEW



PARTS LIST

Key No.	Part No.	Description	Q'ty
AMP PCB ASSY			
	4 222T 39572	Variable Resistor ALC	1
	141 2 464T 21300	Fixer	2
	141 2 464T 20000	Fixer	2
	141 2 464T 08700	Fixer	5
	141 2 382T 03071	Terminal	3
	141 2 382T 03071	Terminal	9
	141 2 368T 19500	Heat Sink, IC	1
	4 235T 32900	Socket, DIN	1
	4 231T 81600	Switch, DIN-MIC	1
	4 235T 37900	Socket, Mic	1
	4 235T 38000	Socket, Mic/Ext. SP	3
	4 235T 15700	Socket, Remote	1
	123 2 411R 10900	Plate Nut	1
		IC BA532 S2	2
		IC LA3160	1
Q803,903		Transistor 2SC536	2
Q801,901, 802,902		Transistor 2SC1571 G or 2SC693	4
Q804,904		Transistor 2SC1571 G	2
Q806,906, 808,908		Transistor 2SC536 G	4
Q701		Transistor 2SC536 G	1
Q805,905, 807,907, 809,909		Transistor 2SC536 F	6
D701,801, 901,802, 902		Diode DS442	5
D807,907, 808,908		Diode DS442	4
D803,903, 804,904		Diode 1S188 AM	4
D805,905, 806,906		Diode 1S188 AM	4
D702		Diode MA26 W	1
D705,706, 809,909		Diode DS442	4
D798		Diode WZ094	1
	CAPACITORS		
C834,934		Mylar 0.15μF 50V ±20%	2
C864,964		Mylar 0.1μF 50V ±20%	2
C804,904		Mylar 0.033μF 50V ±20%	2
C855,955		Mylar 0.027μF 50V ±10%	2
C847,947, 857,957		Mylar 0.012μF 50V ±20%	4
C846,946		Mylar 0.0082μF 50V ±20%	2
C801,901		Mylar 0.0068μF 50V ±20%	2
C806,906, 811,911		Mylar 0.01μF 50V ±20%	4
C856,956		Ceramic 0.0047μF 50V ±10%	2
C714		Ceramic 0.0022μF 50V ±10%	1
C866,966, 830,930		Ceramic 0.001μF 50V ±10%	4
C851,951, 853,953		Ceramic 0.001μF 50V ±10%	4
C835,935		Ceramic 270pF 50V ±10%	2
C850,950		Ceramic 390pF 50V ±10%	2
C840,940, 862,962, 895,995		Ceramic 220pF 50V ±10%	6
C843,943		Ceramic 100pF 50V ±10%	2
C813,913, 818,918		Ceramic 82pF 50V ±10%	4
C821,921, 944,944		Ceramic 82pF 50V ±10%	4
C791		Ceramic 0.022μF 50V +80–20%	1
C793		Ceramic 0.047μF 50V +80 –20%	1
C781,790		Ceramic 0.022μF 50V +80 –20%	2
C849,949, 852,952		Electrolytic 1μF 25V	4
C854,954, 859,959		Electrolytic 1μF 25V	4
C861,961		Electrolytic 1μF 25V	2
C860,960		AL Electrolytic 0.22μF 16V +40–20%	2
C809,909		AL Electrolytic 0.1μF 16V +40–20%	2
C845,945, 848,948		AL Electrolytic 0.1μF 16V +40–20%	4
C858,958		AL Electrolytic 0.1μF 16V +40–20%	2
C810,910		AL Electrolytic 0.1μF 16V +40–20%	2

Key No.	Part No.	Description	Q'ty
AMP PCB ASSY			
C712,713		Electrolytic 2200μF 16V	2
C704		Electrolytic 1000μF 16V	1
C838,938		Electrolytic 1000μF 10V	2
C837,937 702		Electrolytic 470μF 10V	3
C815,915, 792		Electrolytic 220μF 16V	3
C841,941		Electrolytic 220μF 10V	2
C865,965, 794		Electrolytic 100μF 16V	3
C719,703		Electrolytic 100μF 10V	2
C803,903, 832,932		Electrolytic 47μF 10V	4
C701		Electrolytic 33μF 10V	1
C706		Electrolytic 33μF 6.3V	1
C831,931		Electrolytic 22μF 16V	2
C814,914		Electrolytic 22μF 6.3V	2
C842,942, 705		Electrolytic 4.7μF 16V	3
C829,929		Electrolytic 3.3μF 16V	2
C802,902, 805,905		Electrolytic 1μF 25V	4
C812,912, 816,916		Electrolytic 1μF 25V	4
C817,917, 819,919		Electrolytic 1μF 25V	4
C820,920, 822,922		Electrolytic 1μF 25V	4
	RESISTORS		
R812,912, 821,921		Carbon 33K ohm ±10% 1/4W	4
R861,961		Carbon 39K ohm ±10% 1/4W	2
R801,901, 862,962, 711,712, 843,943		Carbon 47K ohm ±10% 1/4W	8
R941		Carbon 82K ohm ±10% 1/4W	1
R841		Carbon 82K ohm ±10% 1/4W	1
R805,905		Carbon 100K ohm ±10% 1/4W	2
R823,923		Carbon 120K ohm ±10% 1/4W	2
R876		Carbon 120K ohm ±10% 1/4W	1
R976		Carbon 120K ohm ±10% 1/4W	1
R813,913		Carbon 150K ohm ±10% 1/4W	2
R822,922, 863,963, 867,967		Carbon 220K ohm ±10% 1/4W	6
R853,953		Carbon 330K ohm ±10% 1/4W	2
R827,927		Carbon 470K ohm ±10% 1/4W	2
R851,951		Carbon 560K ohm ±10% 1/4W	2
R847,947		Carbon 820K ohm ±10% 1/4W	2
R856,956, 888,980		Carbon 1M ohm ±10% 1/4W	4
R706		Carbon 3.3M ohm ±10% 1/4W	1
R705		Carbon 82K ohm ±10% 1/4W	1
R870,970		Carbon 2.2K ohm ±10% 1/4W	2
R808,908, 814,914, 811,911		Carbon 2.2K ohm ±10% 1/4W	6
R829,929		Carbon 2.7K ohm ±10% 1/4W	2
R824,924, 850		Carbon 3.3K ohm ±10% 1/4W	3
R959		Carbon 3.3K ohm ±10% 1/4W	1
R701		Carbon 3.9K ohm ±10% 1/4W	1
R802,902, 858,958		Carbon 4.7K ohm ±10% 1/4W	4
R838,938		Carbon 4.7K ohm ±10% 1/4W	2
R719,877, 977		Carbon 4.7K ohm ±10% 1/4W	3
R817,917		Carbon 5.6K ohm ±10% 1/4W	2
R804,904, 850		Carbon 8.2K ohm ±10% 1/4W	3
R950,852, 952,844, 944		Carbon 8.2K ohm ±10% 1/4W	5
R855,955, 866,966, 865,965		Carbon 10K ohm ±10% 1/4W	6
R816,916, 818,820, 920,878 978		Carbon 10K ohm ±10% 1/4W	7

ARTS LIST

y No.	Part No.	Description	Q'ty
MP PCB ASSY			
720,918		Carbon 10K ohm ±10% 1/4W	2
354,954		Carbon 18K ohm ±10% 1/4W	2
326,926, 349,949, 710		Carbon 22K ohm ±10% 1/4W	5
360,960, 306,906		Carbon 27K ohm ±10% 1/4W	4
925		Carbon 6.8K ohm ±10% 1/4W	1
345,945		Carbon 10 ohm ±10% 1/4W	2
717		Carbon 10 ohm ±10% 1/4W	1
357,957		Carbon 22 ohm ±10% 1/4W	2
328,928		Carbon 33 ohm ±10% 1/4W	2
803,903		Carbon 47 ohm ±10% 1/4W	2
815,848, 948,868, 968		Carbon 56 ohm ±10% 1/4W	5
915		Carbon 56 ohm ±10% 1/4W	1
875,975		Carbon 120 ohm ±10% 1/4W	2
930		Carbon 330 ohm ±10% 1/4W	1
830		Carbon 330 ohm ±10% 1/4W	1
837,937		Carbon 270 ohm ±10% 1/4W	2
807,907		Carbon 560 ohm ±10% 1/4W	2
831,931, 840,940		Carbon 1K ohm ±10% 1/4W	4
869,969		Carbon 1K ohm ±10% 1/4W	2
718,702		Carbon 1K ohm ±10% 1/4W	2
703,871, 971		Carbon 1.2K ohm ±10% 1/4W	3
810,910, 819,864, 964,919		Carbon 1.5K ohm ±10% 1/4W	6
708		Carbon 1K ohm ±10% 1/4W	1
707		Metal 330 ohm ±10% 1W	1
709		Metal 120 ohm ±10% 1W	1
714		Metal 1 ohm ±10% 1W	1
713		Metal 56 ohm ±10% 1W	1
704		Metal 18 ohm ±10% 1/4W	1
OWER SUPPLY PCB ASSY			
16	141 4 230T 64573	P.C. Board Assy, Power Supply	1
	4 235T 35900	Socket, AC-DC Socket	1
	141 2 135T 44900	Cover, AC Socket	1
)703		Diode DS131A	1
)704		Diode DS132A	1
:707,708, 709,710		Ceramic Cap. 0.022μF 50V +80—20%	4
	141 2 381T 04200	Bracket, Fuse	2
	4 243T 12806	Lead Assy, OR & BL	2
/OLUME PCB ASSY			
117	141 4 230T 56102	P.C. Board Assy, Volume (140 9 226T 08000)	1
	4 222T 64500	Variable Resistor 50K (A) Bass, Treble	1
	4 222T 48000	Variable Resistor, 50K (B) Volume	1
	RESISTORS		
R834		Carbon 1.5K ohm ±10% 1/4W	1
R934		Carbon 1.5K ohm ±10% 1/4W	1
R835,935		Carbon 2.2K ohm ±10% 1/4W	2
R832,932		Carbon 10K ohm ±10% 1/4W	2
R836,936		Carbon 3.9K ohm ±10% 1/4W	2
	CAPACITORS		
:823,923, 827,927		Mylar 0.068μF 50V ±20%	4
:826,926		Mylar 0.022μF 50V ±20%	2
:824,924		Mylar 0.01μF 50V ±20%	2
:828,928		Ceramic 0.0022μF 50V ±10%	2
:825,925		AL Electrolytic 0.33μF 16V	2
IEADPHONE PCB ASSY			
118	141 4 230T 56201	P.C. Board Assy, Headphone (140 9 230T 88501)	1
	4 235T 50100	Socket, Headphone	1
R842 942		Solid Resis. 100 ohm ±10% 1/2W	2

Key No.	Part No.	Description	Q'ty
TUNER PCB ASSY			
129	141-4-230T-59071	PC Board Assy, Tuner	1
	4-257T-29930	ANT Coil, SW	1
L110	4-258T-08340	OSC Coil, SW	1
L112	4-258T-05540	OSC Coil, LW	1
	4-224T-09400	Variable Capacitor	1
CT5~8	4-224R-11671	Trimmer 10pF	4
CT1	4-224T-08800	Trimmer	1
CT3,4	4-224T-07300	Trimmer 30pF	2
CT2	4-224T-11671	Trimmer 10pF	1
L102	4-257T-27730	ANT Coil	1
L104	4-265R-11800	VHF Coil	1
L105	4-265R-01300	VHF Coil	1
L106	4-265R-12600	VHF Coil	1
L103	4-265R-12400	VHF Coil	1
L107	4-265T-51310	VHF Coil	1
T301	4-256R-20831	IFT	1
T302	4-256R-15131	IFT	1
T303	4-256R-02331	IFT	1
T305	4-256R-00131	IFT	1
T304	4-256T-11230	IFT	1
T306	4-256R-00231	IFT	1
	4-256T-80400	IF Filter	
	4-256T-80471	IF Filter	
CF302,303	4-256T-80472	IF Filter or	2
	4-256T-80473	IF Filter	
	4-256T-80474	IF Filter	
CF301	4-256T-81171	IF Filter	1
SVR501	4-222T-39471	Semi Variable resistor	1
SVR301	4-222T-39475	Semi Variable resistor	1
SVR502	4-222T-39475	Semi Variable resistor	1
CR501,502	4-227T-02300	CR Pack	2
	4-231T-77500	Switch	1
L113	4-265R-12700	VHF Coil	1
B102	123-2-471R-10400	Core	1
B101	123-2-471R-10900	Core	1
L115	4-253R-11160	RF Choke	1
L114	4-253R-12900	RF Choke	1
	141-2-322T-34800	Shield Plate	1
	141-2-322T-34900	Shield Plate	1
	141-0-161T-51700	Push Button Assy, Band Select	5
Q102		Transistor 2SC668DRF	1
Q103,104, 105		Transistor 2SC930D Conv	3
Q301,302, 303		Transistor 2SC930E IF	3
Q304		Transistor 2SC930D IF	1
Q101		FET 2K49 H1	1
IC501		IC HA11227	1
D101,102, 103,104, 301,302		Diode DS442 X or 1S2473	6
D303,306, 307,308		Diode 1S188 AM	4
D304,305		Diode 1S188 FM1	2
D504		Diode YZ060	1
D309		Diode MV11T	1
D501,502, 310		Diode DS442 X or 1S2473	3
D105		Diode 1S553	1
D106		Diode 1S2473	1
		CAPACITORS	
C110		Ceramic 2pF 50V ±0.25pF	1
C124		Ceramic 4pF 50V ±0.25pF	1
C108		Ceramic 4pF 50V ±0.25pF	1
C133		Ceramic 7pF 50V ±0.5pF	1
C121		Ceramic 4pF 50V ±0.5pF	1
C117, 140		Ceramic 7pF 50V ±0.5pF	2
C123		Ceramic 10pF 50V ±10%	1
C109		Ceramic 12pF 50V ±10%	1
C105,126, 142		Ceramic 15pF 50V ±10%	3
C129		Ceramic 10pF 50V ±10%	1
C125		Ceramic 30pF 50V ±10%	1
C111		Ceramic 220pF 50V ±20%	1
C112		Ceramic 0.001μF 50V ±20%	1
C106		Ceramic 470pF 50V ±20%	1
C107,113, 114,115, 116		Ceramic 0.022μF 50V +80—20%	5
C136		Ceramic 68pF 50V ±5%	1
C340		Ceramic 100pF 50V ±20%	1

PARTS LIST

Key No.	Part No.	Description	Q'ty
TUNER PCB ASSY			
C118,119		Ceramic 0.022μF 50V +80—20%	2
C122		Ceramic 0.047μF 50V +80—20%	1
C131		Mylar 0.0033μF 50V ±20%	1
C134		Mylar 0.0047μF 50V ±20%	1
C128		Mylar 0.01μF 50V ±20%	1
C137		Mylar 0.022μF 50V ±20%	1
C135		Stylol 180pF 50V ±5%	1
C132		Stylol 350pF 50V ±5%	1
C130		Stylol 3600pF 50V ±5%	1
C318		Ceramic 1pF 50V ±0.25pF	1
C303,307		Ceramic 2pF 50V ±0.25pF	2
C319		Ceramic 30pF 50V ±10%	1
C316		Ceramic 33pF 50V ±10%	1
C322,323, 325		Ceramic 220pF 50V ±20%	3
C301		Ceramic 560pF 50V ±10%	1
C317,144		Ceramic 0.01μF 50V +80 —20%	2
C309,310, 313,315, 320		Ceramic 0.022μF 50V +80—20%	5
C329		Ceramic 0.022μF 50V +80 —20%	1
C304,327, 328		Ceramic 0.047μF 50V +80 —20%	3
C333		Ceramic 0.022μF 50V +80 —20%	1
C306		Mylar 0.0022μF 50V ±20%	1
C311		Mylar 0.01μF 50V ±20%	1
C312		Mylar 0.01μF 50V ±20%	1
C305,321		Mylar 0.022μF 50V ±20%	2
C302,308		Mylar 0.047μF 50V ±20%	2
C332		Mylar 0.012μF 50V ±20%	1
C331		AL Electrolytic 0.47μF 10V	1
C324		Electrolytic 1μF 10V	1
C314		Electrolytic 4.7μF 10V	1
C330		Electrolytic 47μF 10V	1
C326		Electrolytic 470μF 10V	1
C510		Electrolytic 220μF 16V	1
C501		Electrolytic 2.2μF 25V	1
C506		AL Electrolytic 2.2μF 16V +40 —20%	1
C505,507		AL Electrolytic 1μF 16V +40 —20%	2
C504		AL Electrolytic 0.33μF 16V	1
C511,512		AL Electrolytic 0.1μF 16V +40 —20%	2
C502		Mylar 0.047μF 50V ±20%	1
C508,509		Mylar 0.012μF 50V ±20%	2
C503		Styrol 470pF 50V ±5%	1
C513, 143		Ceramic 100pF 50V ±20%	2
C514		Ceramic 0.022μF 50V +80 —20%	1
		RESISTORS	
R122		Carbon 10 ohm ±10% ¼W	1
R116		Carbon 5.6K ohm ±10% ¼W	1
R110		Carbon 33 ohm ±10% ¼W	1
R104		Carbon 100 ohm ±10% ¼W	1
R114		Carbon 470 ohm ±10% ¼W	1
R119		Carbon 270 ohm ±10% ¼W	1
R112,131, 132		Carbon 1.2K ohm ±10% ¼W	3
R105		Carbon 2.2K ohm ±10% ¼W	1
R113		Carbon 2.2K ohm ±10% ¼W	1
R107		Carbon 3.9K ohm ±10% ¼W	1
R115		Carbon 5.6K ohm ±10% ¼W	1
R102,106		Carbon 15K ohm ±10% ¼W	2
R111,130		Carbon 15K ohm ±10% ¼W	2
R117		Carbon 100K ohm ±10% ¼W	1
R108,109		Carbon 100K ohm ±10% ¼W	2
R101		Carbon 470K ohm ±10% ¼W	1
R118		Carbon 10K ohm ±10% ¼W	1
R103		Carbon 1K ohm ±10% ¼W	1
R120		Carbon 10K ohm± 10% ¼W	1
R301		Carbon 33 ohm ±10% ¼W	1
R305		Carbon 33 ohm ±10% ¼W	1
R310		Carbon 33 ohm ±10% ¼W	1
R315		Carbon 33 ohm ±10% ¼W	1
R313		Carbon 100 ohm ±10% ¼W	1
R336		Carbon 100 ohm ±10% ¼W	1
R307		Carbon 330 ohm ±10% ¼W	1
R314		Carbon 330 ohm ±10% ¼W	1
R317		Carbon 330 ohm ±10% ¼W	1
R325		Carbon 330 ohm ±10% ¼W	1
R340		Carbon 330 ohm ±10% ¼W	1
R335,121		Carbon 56 ohm ±10% ¼W	2

Key No.	Part No.	Description	Q'ty
TUNER PCB ASSY			
C133		Carbon 150 ohm ±10% ¼W	1
R319		Carbon 270 ohm ±10% ¼W	1
R302		Carbon 390 ohm ±10% ¼W	1
R304		Carbon 560 ohm ±10% ¼W	1
R308		Carbon 560 ohm ±10% ¼W	1
R309		Carbon 560 ohm ±10% ¼W	1
R318		Carbon 560 ohm ±10% ¼W	1
R327		Carbon 330 ohm ±10% ¼W	1
R344		Carbon 330 ohm ±10% ¼W	1
R345		Carbon 10K ohm ±10% ¼W	1
R350		Carbon 4.7K ohm ±10% ¼W	1
R311		Carbon 680 ohm ±10% ¼W	1
R306		Carbon 1K ohm ±10% ¼W	1
R320,321		Carbon 1K ohm ±10% ¼W	2
R324		Carbon 1K ohm ±10% ¼W	1
R329		Carbon 1K ohm ±10% ¼W	1
R339		Carbon 3.3K ohm ±10% ¼W	1
R326		Carbon 3.9K ohm ±10% ¼W	1
R322,323		Carbon 5.6K ohm ±10% ¼W	2
R342		Carbon 5.6K ohm ±10% ¼W	1
R330		Carbon 10K ohm ±10% ¼W	1
R331		Carbon 10K ohm ±10% ¼W	1
R328		Carbon 10K ohm ±10% ¼W	1
R312		Carbon 15K ohm ±10% ¼W	1
R316		Carbon 15K ohm ±10% ¼W	1
R333		Carbon 15K ohm ±10% ¼W	1
R338		Carbon 15K ohm ±10% ¼W	1
R343		Carbon 33K ohm ±10% ¼W	1
R332		Carbon 39K ohm ±10% ¼W	1
R341		Carbon 68K ohm ±10% ¼W	1
R303		Carbon 560K ohm ±10% ¼W	1
R337		Carbon 1M ohm ±10% ¼W	1
R511		Carbon 180 ohm ±10% ¼W	1
R510		Carbon 220 ohm ±10% ¼W	1
R509,504		Carbon 1K ohm ±10% ¼W	2
R512,513		Carbon 2.2K ohm ±10% ¼W	2
R506,507		Carbon 3.3K ohm ±10% ¼W	2
R508		Carbon 820 ohm ±10% ¼W	1
R514,515		Carbon 15K ohm ±10% ¼W	2
R503		Carbon 18K ohm ±10% ¼W	1
R501		Carbon 22K ohm ±10% ¼W	1
R502		Carbon 1K ohm ±10% ¼W	1
R505		Carbon 100K ohm ±10% ¼W	1
R516		Carbon 2.2K ohm ±10% ¼W	1
LED PCB ASSY			
130	141 4 230T 64400	P.C. Board Assy, LED (140 9 230T 87660)	1
D503		LED SLP-131B-A or B or C RED	1
SCREW MOUNTING			
201		Pan Head Screw 2.6x8	1
202		Pan Head Screw 3x8	6
203		Pan Head Screw 3x10	4
205		Pan Head Tapping Screw 3x8	12
206		Binding Hd. Tapping Screw 3x10	14
207		Pan Hd. Tapping Screw 3x14	2
208		Pan Hd. Tapping Screw 3x25	4
209		Pan Hd. Tapping Screw 3x30	6
210		Pan Hd. Tapping Screw 3x35	6
211		Hexagon Nut 3	2
212		Hexagon Bolt 2.6x12	1
213		Hexagon Socket Hd. Bolt 3x8	2
214		Washer 3x8x0.5	1
215		Washer 3x8x1	1
216	141 2 457T 23000	Special Washer 2	2
217	141 2 457T 23100	Special Washer 3	1
218		Pan Hd. Tapping Screw W/Washer 3x8	12
219		Pan Hd. Tapping Screw W/Washer 3x10	4
220		Pan Hd. Screw W/Spring Washer 3x4	1
221		Pan Hd. Tapping Screw W/Washer 3x6	5
223		Washer 3x10x0.5	2
224		Pan Hd. tapping screw 3x16	1
225		Pan Hd, Tapping Screw 3x10	2
226		Flat Hd, Screw 2-6x4	2
227		Pan Hd, Screw 3x6	2

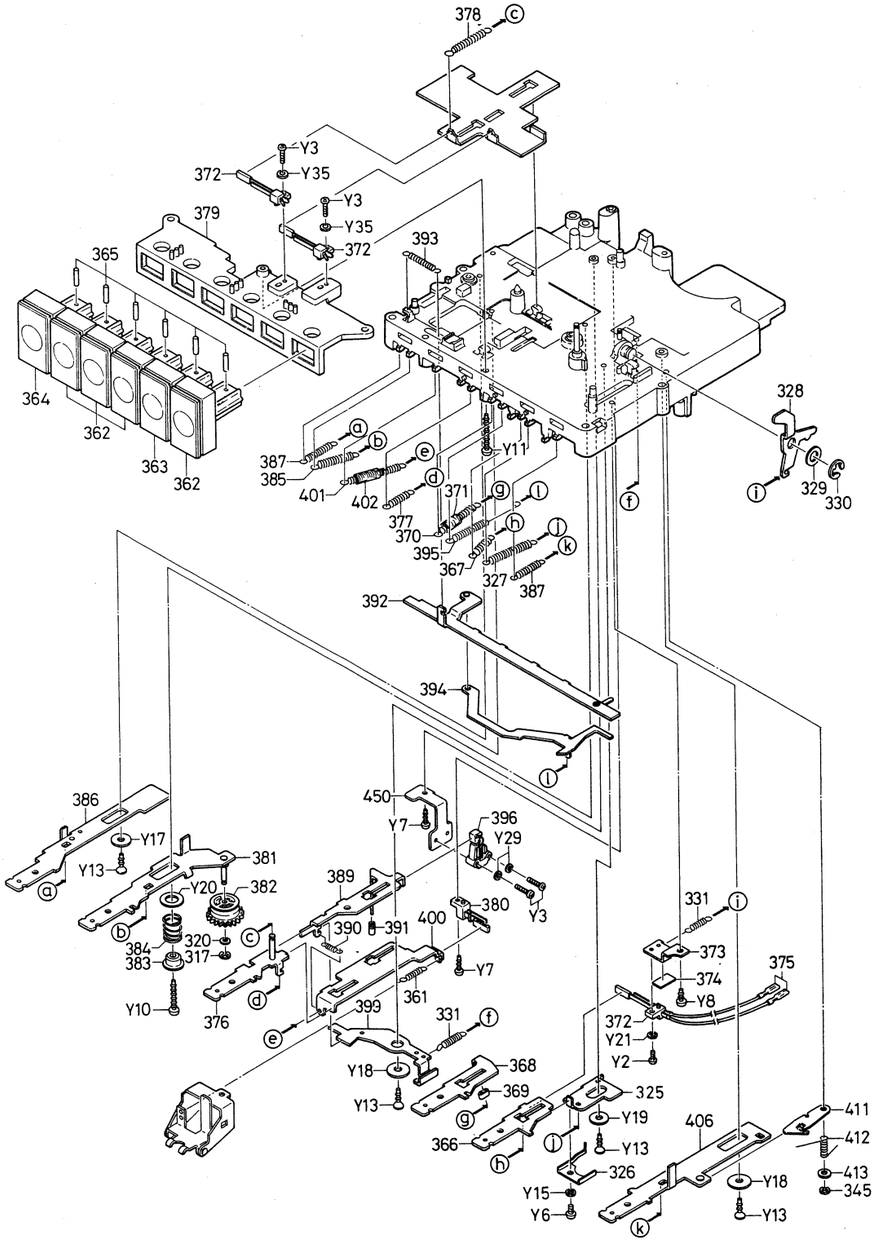
Key No.	Part No.	Description	Q'ty
MECHANISM			
301	141 0 311T 06100	Chassis Assy	1
302	141 2 731T 37502	Slide, Head	1
303	141 2 821T 10700	Tape Guide	1
304	141 2 852T 43700	Spring Wire, Pinch Roller	1
305	141 2 853T 46901	Spring Plate, Cassette plase	1
306	141 2 375T 06900	Bracket, Head	1
307	4 242T 22500	R/P Head	1
308	4 242T 18602	E Head	1
309	141 2 851T 82700	Spring Coil, R/P Head	1
310	141 2 457T 10300	Special Washer, R/P Head	1
311	123 2 472R 00200	Lug	1
312	141 2 472T 02200	Lug	2
313	141 2 490T 00600	Tube	2
314	141 2 345T 00400	Steel Ball	4
315	141 2 853T 53200	Spring Plate	1
316	141 0 545T 02900	Lever Pinch Roller	1
317	141 2 457T 23000	Special Washer	4
318	141 0 521T 07901A	Flywheel Assy	1
319	141 2 457T 04300	Special Washer	1
320	141 2 453T 30201	Washer 2.5x5x0.25 Nylon	3
321	141 2 453T 30202	Washer 2.6x4.7x0.5 Nylon	1
322	141 0 524T 03600A	Bracket Flywheel Assy	1
323	141 2 683T 22800	Ring	1
324	123 2 472R 00400	Lug	2
325	141 2 742T 08201	Lever	1
326	141 2 853T 52900	Spring Plate	1
327	141 2 851T 80100	Spring Coil	1
328	141 2 741T 96400	Lever	1
329	141 2 453T 30802	Washer 6.2x9.5x0.5 Nylon	1
330	141 2 457T 23200	Special Washer	1
331	141 2 851T 56100	Spring Coil	3
332	4 527T 11271	Motor	1
333	141 2 661T 69200	Pully, Motor	1
334	141 2 421T 12501	Special Screw, Motor	2
335	141 2 445T 07000	Rubber Cushion, Motor	2
336	141 2 447T 36000	Cushion, Motor	2
337	141 2 564T 18000	Square Belt Main	1
338	141 2 564T 16500	Belt	1
339	141 2 464T 08700	Fixer	1
340	4 237T 02100	Terminal Board	1
341		Carbon 560 ohm ±10% 1/4W	1
342	141 0 661T 02400	Pulley Assy, Supply	1
343	141 2 531T 10101	Reel Plate, Supply	1
344	141 2 457T 11000	Special Washer	4
345	141 2 457T 23700	Special Washer	2
346	141 2 853T 48000	Spring Plate, Back Tention	1
347	141 2 457T 06200	Special Washer, Back Tention	2
348	141 2 531T 10700	Reel Plate, Tack UP	1
349	141 2 661T 22901	Pully, Tack Up	1
350	141 2 452T 02300	Felt	1
351	141 2 661T 23001	Pulley, Tack Up	1
352	141 2 453T 31200	Washer 2x8.5x0.25 Poly	1
353	141 2 453T 30100	Washer 2.1x4x0.13 Nylon	2
354	141 2 453T 30101	Washer 2.1x4x0.25 Nylon	4
355	141 2 453T 32400	Washer 4.9x8x0.13 Nylon	1
356	141 2 453T 32401	Washer 4.9x8x0.25	1
357	141 2 445T 21200	Rubber Cushion	1
358	141 2 742T 07000	Lever	1
359	141 2 747T 15000	Bracket Lever	1
360	141 2 467T 02600	Rivette	1
361	141 2 851T 96200 141 2 855T 01900 141 2 855T 12400 141 2 855T 19900 141 2 855T 28700	Spring Coil Spring Coil Spring Coil Spring Coil Spring Coil	or 1
362	141 9 161T 03800	Push Button Assy	4
363	141 9 161T 03802	Push Button Assy, Stop	1
364	141 9 161T 03801	Push Button Assy, REC	1
365	141 2 488T 01801	Pin	1
366	141 2 731T 55000	Slide, Stop Button	1
367	141 2 855T 29900	Spring Coil	1
368	141 2 731T 54300	Slide, FF Button	1
369	141 2 490T 00500	Tube	3
370	141 2 855T 29800	Spring Coil	1
371	141 2 490T 01100	Tube	20
372	4 231T 68000	Switch	3
373	141 2 365T 37900	Bracket, Switch	1
374	141 2 352T 26900	Spacer	1
375	4 243T 12805	Lead	2

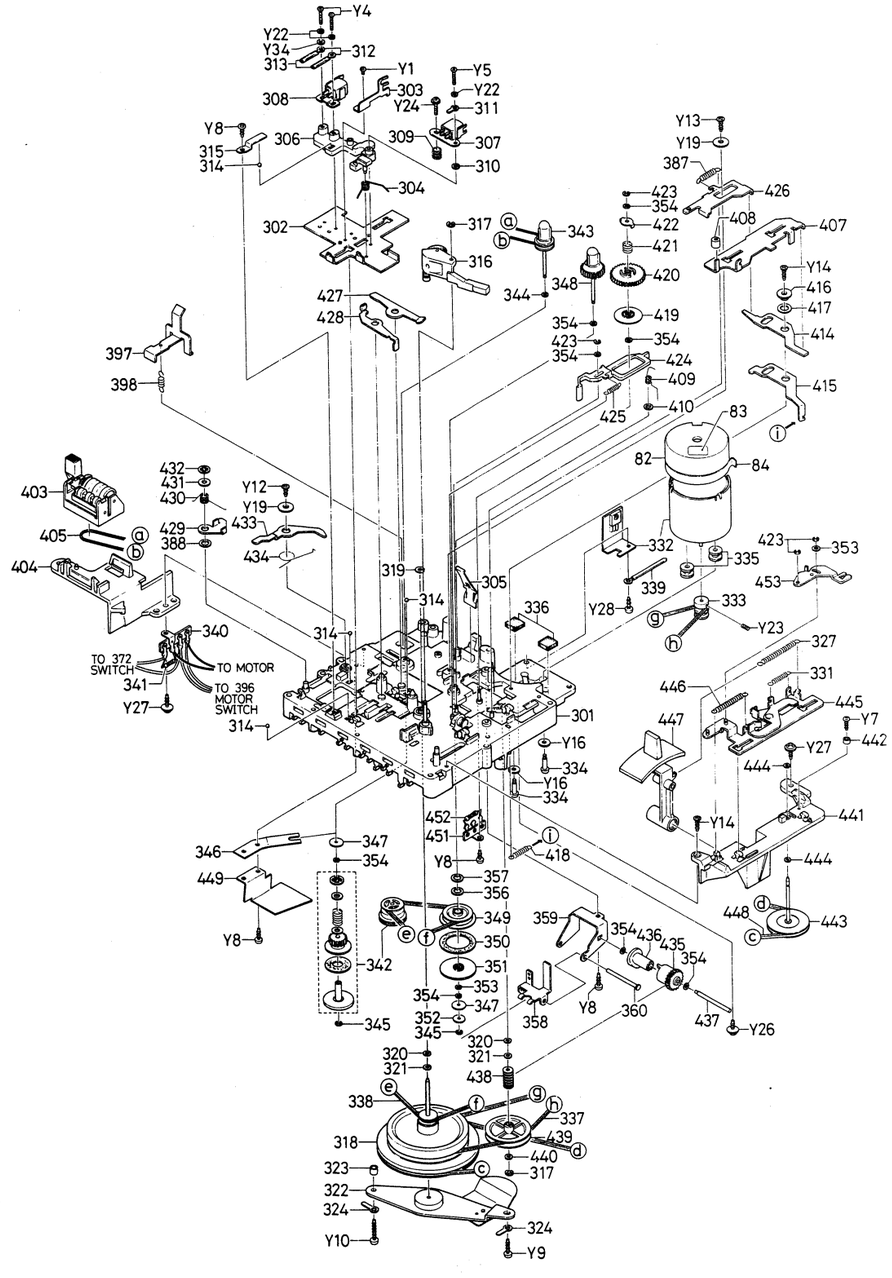
Key No.	Part No.	Description	Q'ty
MECHANISM			
376	141 0 731T 16300	Slide Assy	1
377	141 2 855T 28800	Spring Coil	1
378	141 2 851T 96400	Spring Coil	1
379	141 2 351T 43300	Bracket Mounting	1
380	4 231T 71200	Switch FWD	1
381	141 0 731T 16400	Side Assy, REW	1
382	141 2 661T 22600	Pulley, REW	1
383	141 2 461T 30200	Pipe	1
384	141 2 851T 65600	Spring Coil	1
385	141 2 855T 17400	Spring Coil	1
386	141 2 731T 57800	Slide, REC	1
387	141 2 851T 93000	Spring Coil	3
388	141 2 453T 30700	Washer 5.2x8x0.13 Nylon	2
389	141 2 731T 43101	Slide	1
390	141 2 855T 00200	Spring Coil	1
391	141 2 490T 05000	Tube	6
392	141 0 731T 16501	Slide Assy, Button Lock	1
393	141 2 851T 73800	Spring Coil	1
394	141 2 742T 07100	Lever	1
395	141 2 851T 91200	Spring Coil	1
396	4 231T 78500	Switch, Main	1
397	141 2 742T 12500	Lever	1
398	141 2 851T 87701	Spring Coil	1
399	141 2 742T 08100	Lever	1
400	141 2 731T 55300	Slide	1
401	141 2 855T 19600	Sprinc Coil	1
402	141 2 490T 00900	Tube	20
403	141 2 811T 05400	Counter	1
404	141 2 812T 07000	Bracket, Counter	1
405	141 2 564T 18200	Square Belt	1
406	141 0 731T 16600	Slide Assy, Pouse Button	1
407	141 2 731T 57600	Slide, Pouse	1
408	141 2 461T 30700	Pipe	1
409	141 2 852T 42800	Spring Wire	1
410	141 2 457T 10300	Special Washer 3.2x5.7x0.1	1
411	141 2 614T 05200	Lever Lock	1
412	141 2 852T 37900	Spring Wire	1
413	141 2 453T 01200	Washer 3x8x1	1
414	141 2 742T 07400	Lever, Pouse	1
415	141 2 742T 06900	Lever	1
416	141 2 461T 28700	Pipe	1
417	141 2 453T 30800	Washer 6.2x9.5x0.13 Nylon	1
418	141 2 855T 15100	Spring Coil	1
419	141 2 661T 24300	Pulley	1
420	141 0 581T 09000	Gear Assy	1
421	141 2 855T 16500	Spring Coil	1
422	141 2 858T 08100	Bracket, Spring	1
423	141 2 457T 23800	Special Washer	3
424	141 2 731T 53400	Slide, Auto Stop	1
425	141 2 855T 15400	Spring Coil	1
426	141 2 731T 54200	Slide, Rev	1
427	141 2 742T 07500	Lever, Rev	1
428	141 2 742T 07600	Lever, Cue	1
429	141 2 742T 07900	Lever, Rec	1
430	141 2 852T 45400	Spring Wire	1
431	141 2 453T 00800	Washer 3x8x0.5	1
432	141 2 457T 20100	Special Washer	1
433	141 2 742T 08000	Lever	1
434	141 2 852T 43300	Spring Wire	1
435	141 2 581T 09100	Gear, Auto Stop	1
436	141 2 661T 24400	Pulley, Auto Stop	1
437	141 2 753T 20800	Shaft	1
438	141 2 581T 01900	Gear	1
439	141 0 661T 03100	Pulley Assy	1
440	141 2 453T 30200	Washer 2.6x4.7x0.13 Nylon	2
441	141 0 312T 01400	Sub Chassis Assy	1
442	141 2 461T 32800	Pipe	1
443	141 0 661T 03000A	Pully Assy	1
444	141 2 453T 30001	Washer 1.7x3.2x0.25	1
445	141 0 731T 57700	Slide Assy	1
446	141 2 851T 63800	Spring Coil	1
447	141 9 741T 01200	Lever Assy	1
448	141 2 564T 19500	Square Belt	1
449	141 2 322T 31401	Shield Plate	1
450	141 2 365T 41000	Bracket Switch	1
451	4 237T 05800	Terminal Board	1
452		Metal Resistor 10 ohm ±10% 1W	1
453	141 2 742T 22200	Lever	1

PARTS LIST

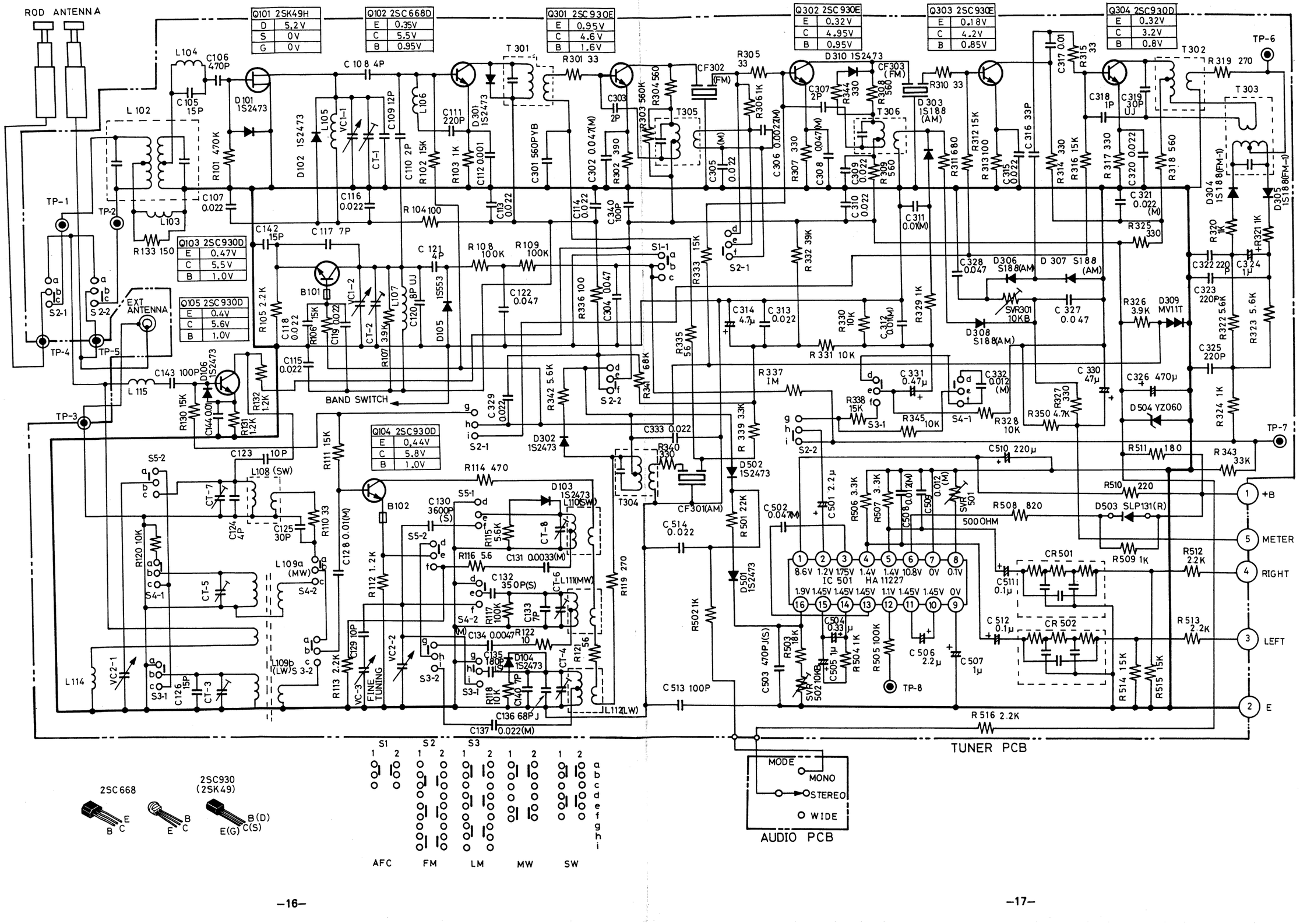
Key No.	Part No.	Description	Q'ty
MECHANISM SCREWS			
Y1		Pan Hd. Screw 2x2	1
Y2		Pan Hd. Screw 2x4	1
Y3		Pan Hd. Screw 3x8	3
Y4		Pan Hd. Screw 2x11	2
Y5		Pan Hd. Screw 2x12	1
Y6		Pan Hd. Screw 2.6x4	1
Y7		Pan Hd. Tapping Screw 2.3x8	1
Y8		Pan Hd. Tapping Screw 3x6	5
Y9		Binding Hd. Tapping Screw 3x10	1
Y10		Pan Hd. Tapping Screw 3x14	2
Y11		Pan Hd. Tapping Screw 3x20	1
Y12		Pan Hd. Tapping Screw 3x6	1
Y13		Flat Hd. Tapping Screw 3x8	5
Y14		Flat Hd. Tapping Screw 3x10	2
Y15		Washer 2.6x5x0.5	1
Y16		Washer 3x8x0.5	2
Y17		Washer 3x10x1	1
Y18		Flat Hd. Wood Screw 3x12	2
Y19		Washer 4x10x0.8	3
Y20		Washer 6x11.5x0.8	1
Y21		Washer 2x4.8x0.3	2
Y22		Spring Washer 2	3
Y23		Head Less Screw 2x3	1
Y24		Pan Hd. Screw W/Washer 2x12	1
Y25		Pan Hd. Tapping Screw W/Washer 2.3x8	1
Y26		Pan Hd. Tapping Screw W/Washer 3x6	1
Y27		Pan Hd. Tapping W/Washer 3x10	2
Y29		Washer 2x4.3x0.3	3
Y30		Pan Hd. Tapping Screw W/Washer 2.3x6	1
Y28		Tapping Screw 3.5x8mm	1
Y34		Washer 2mm	1
Y35		Washer 3.5mm	2

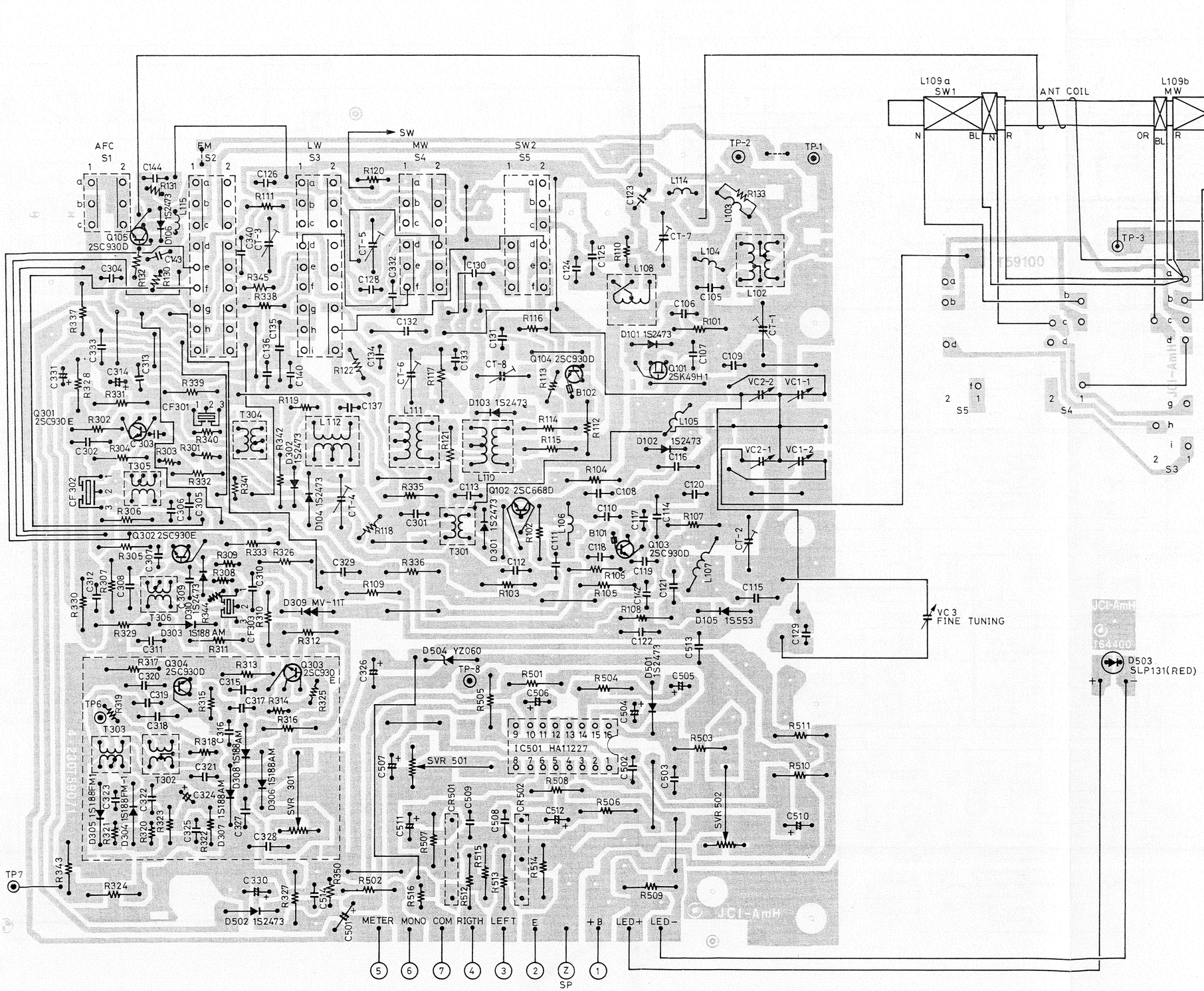
EXPLODED VIEW (MECHANISM)





SCHMATIC DIAGRAM (TUNER)

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L109a SW1
ANT COIL
L109b MW
N BL N R
OR BL R N
FM 300Ω
H E
AM
C103
C104
L101
TP-3
TP-4
TP-5
S2
S3
S4
S5
AFC S1
FM S2
LW S3
SW
MW S4
SW2 S5
TP-2
TP-1
L114
R133
L103
C123
Q105 2SC930D
D106 1S2473
C144
R131
C115
C143
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R130
C304
R337
C333
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C313
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CF301
Q301 2SC930E
R302
C303
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R332
CF302
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C306
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R342
D307 1S2473
D104 1S2473
CT-4
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D308 1S2473
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D303 1S188 AM
C311
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D309 MV-11T
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C301
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T301
C113
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D301 1S2473
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C108
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C117
C114
R107
B101
Q103 2SC930D
C118
C119
R106
R105
C112
R103
C142
C121
L107
CT-2
C115
R108
D105 1S553
C122
C129
VC3 FINE TUNING
C513
D501 1S2473
C505
D503 SLP131(RED)
D504 YZ060
TP-8
C326
R501
R504
C506
R505
C504
IC501 HA11227
R503
R511
R510
C507
SVR 501
C502
C503
R508
R506
SVR 502
C510
C511
CR501
C509
C508
CR502
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R514
R512
R509
R502
R516
R350
C514
C501
R327
C330
D502 1S2473
TP7
R343
R324
TP6
R319
T303
T302
C320
C319
C318
Q304 2SC930D
Q303 2SC930 E
R317
R313
C315
C317
R314
R316
R315
C316
R318
C321
C324
C323
C322
C325
R321
R320
R323
R322
C327
C328
D305 1S188FM1
D304 1S188FM-1
D307 1S188AM
D308 1S188AM
D306 1S188AM
SVR 301
C326
R325
C332
C130
C124
C125
R110
L108
C105
L102
C106
R101
CT-1
D101 1S2473
Q101 2SK49H1
C107
C109
VC2-2
VC1-1
VC2-1
VC1-2
C116
C120
L105
D102 1S2473
R104
C108
R107
C103
C104
L101
TP-3
TP-4
TP-5
S2
S3
S4
S5
VC3 FINE TUNING
D503 SLP131(RED)
METER
MONO
COM
RIGTH
LEFT
E
+B
LED+
LED-
SP
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6
7
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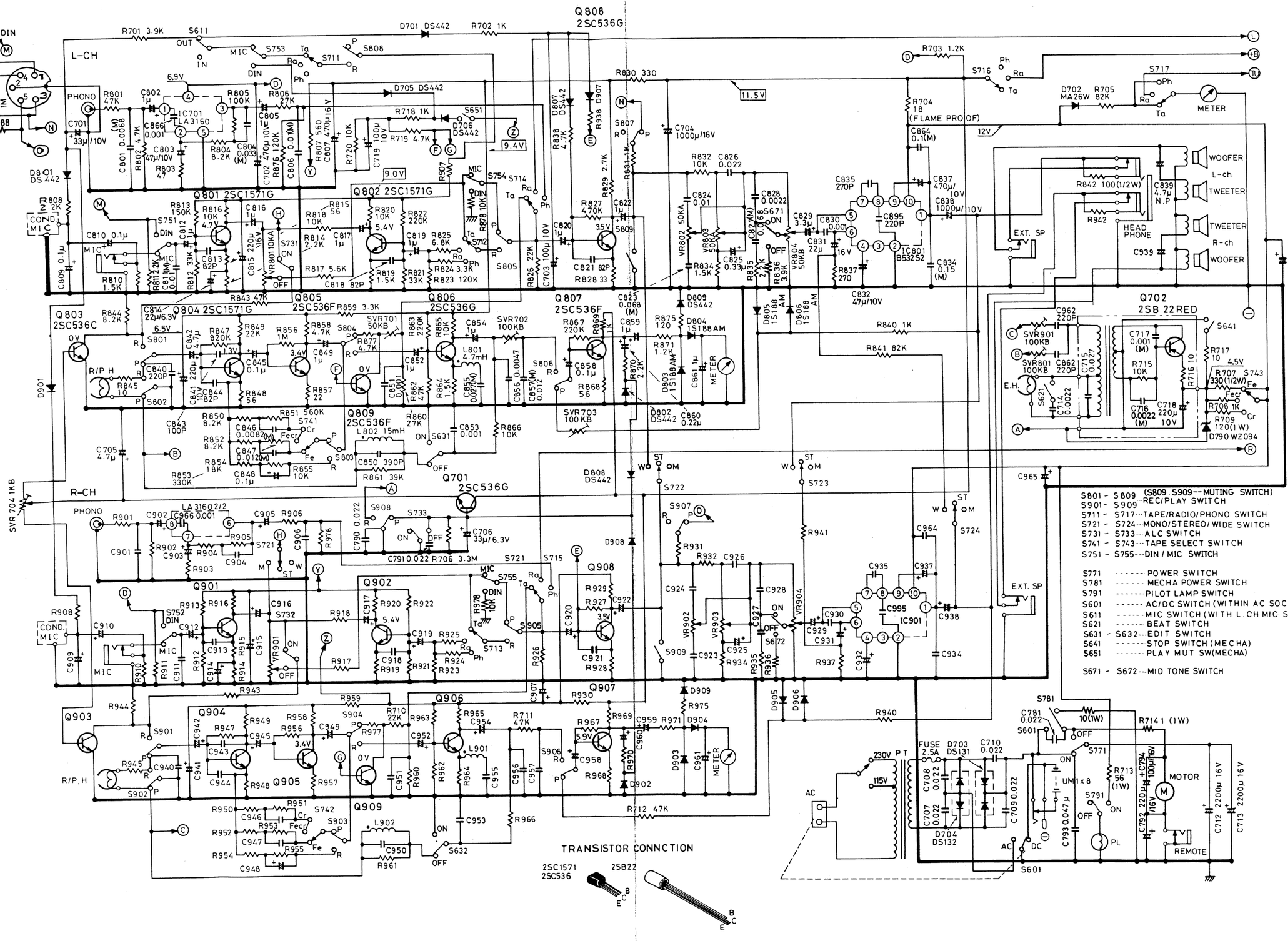
Z
1
JCI-AmH
TS4400
TS9100

SCHEMATIC DIAGRAM (AMPLIFIER)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R-CH
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Q803 2SC536C
Q804 2SC1571G
Q805 2SC536F
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Q809 2SC536F
Q901
Q902
Q903
Q904
Q905
Q906
Q907
Q908
Q909
Q701 2SC536G
Q702 2SB22RED
IC701 LA3160
IC801 B53252
LA3160 2/2
D901 DS442
D808 DS442
D809 DS442
D802 DS442
D804 1S188AM
D805 1S188AM
D806 1S188AM
D803 1S188AM
D907 MA26W
D790 WZ094
D902 DS132
D903 DS131
D704 DS132
SVR704 1KB
SVR701 50KB
SVR702 100KB
SVR703 100KB
SVR901 100KB
SVR801 100KB
VR802 50KA
VR803 50KA
VR804 50KB
VR901 10KA
R704 18 (FLAME PROOF)
R842 100(1/2W)
R941 1K
R940
R841 82K
R712 47K
R713 56 (1W)
R714 1 (1W)
R707 330(1/2W)
R709 120(1W)
R708 1K
R717 10
R942
R888 1M
R988
R808 2.2K
R908
R943 47K
R944
R945
R910
R909 0.1μ
R810 1.5K
R911 22K
R912 33K
R913 150K
R914
R915
R916 10K
R917
R918 10K
R919 1.5K
R920 10K
R921
R922 220K
R923
R924 3.3K
R925 6.8K
R926 22K
R927 470K
R928 33
R929 2.7K
R930 330
R931
R932 10K
R933 1.1K
R934 1.5K
R935 2.2K
R936 3.9K
R937 270
R938 D907
R939
R940
R943
R944
R945
R946
R947 820K
R948 82P
R949 22K
R950
R951 560K
R952
R953
R954 18K
R955 10K
R956 1M
R957 22
R958 4.7K
R959 3.3K
R960
R961 39K
R962 47K
R963 220K
R964 1.5K
R965 10K
R966 10K
R967 220K
R968 56
R969 1K
R970 2.2K
R971 1.2K
R975
R976
R977 4.7K
R978 10K
R979 10K
C701 33μ/10V
C702 470μ 10V
C703 100μ 10V
C704 1000μ/16V
C705 4.7μ
C706 33μ/6.3V
C707 0.022
C708 0.022
C709 0.022
C710 0.022
C712 2200μ 16V
C713 2200μ 16V
C714 0.0022
C715 0.027
C716 0.0022 (M) 10V
C717 0.001 (M)
C718 220μ 10V
C792 220μ +C794 100μ/16V
C793 0.047μ
C781 0.022
C790 0.022
C791 0.022
C801 0.0068 (M)
C802 1μ
C803 47μ/10V
C804 0.039 (M)
C805 10V
C806 0.0 (M)
C807 470μ 16V
C808 0.1 (M)
C809 0.1μ
C810 0.1μ
C811 0.0 (M)
C812 1μ
C813 82P
C814 22μ/6.3V
C815 220μ 16V
C816 1μ
C817 1μ
C818 82P
C819 1μ
C820 1μ
C821 82P
C822 1μ
C823 0.068 (M)
C824 0.01
C825 0.33μ
C826 0.022
C827 0.068 (M)
C828 0.0022
C829 3.3μ
C830 0.001
C831 22μ
C832 47μ/10V
C833 0.15 (M)
C834 0.15 (M)
C835 270P
C836 1000μ/10V
C837 470μ/10V
C838 1000μ/10V
C839 4.7μ N.P
C840 220P
C841 0.0022
C842 4.7μ
C843 100P
C844 82P
C845 0.1μ
C846 0.0082 (M)
C847 0.012 (M)
C848 0.1μ
C849 1μ
C850 390P
C851 0.001
C852 1μ
C853 0.001
C854 1μ
C855 0.027 (M)
C856 0.0047
C857 (M) 0.012
C858 0.1μ
C859 1μ
C860 0.22μ
C861 1μ
C862 220P
C864 0.1 (M)
C865 100μ 16V
C895 220P
C905 R906
C906
C907
C909
C910
C911
C912
C913
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C956
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C958
C959
C960
C961
C962 220P
C964
C965
C995
1C901
L801 4.7mH
L802 15mH
L901
L902
S611
S711
S712
S713
S714
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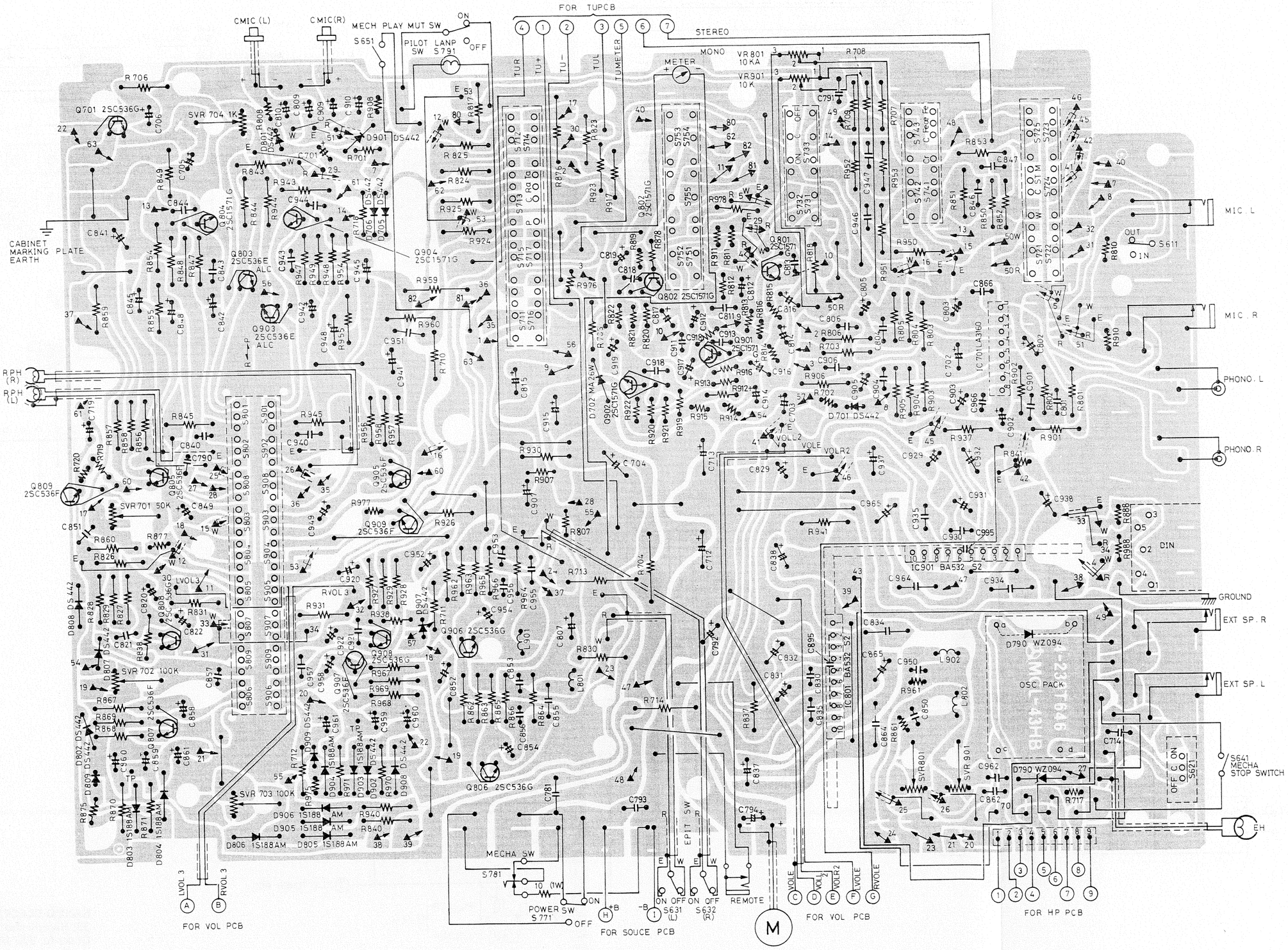
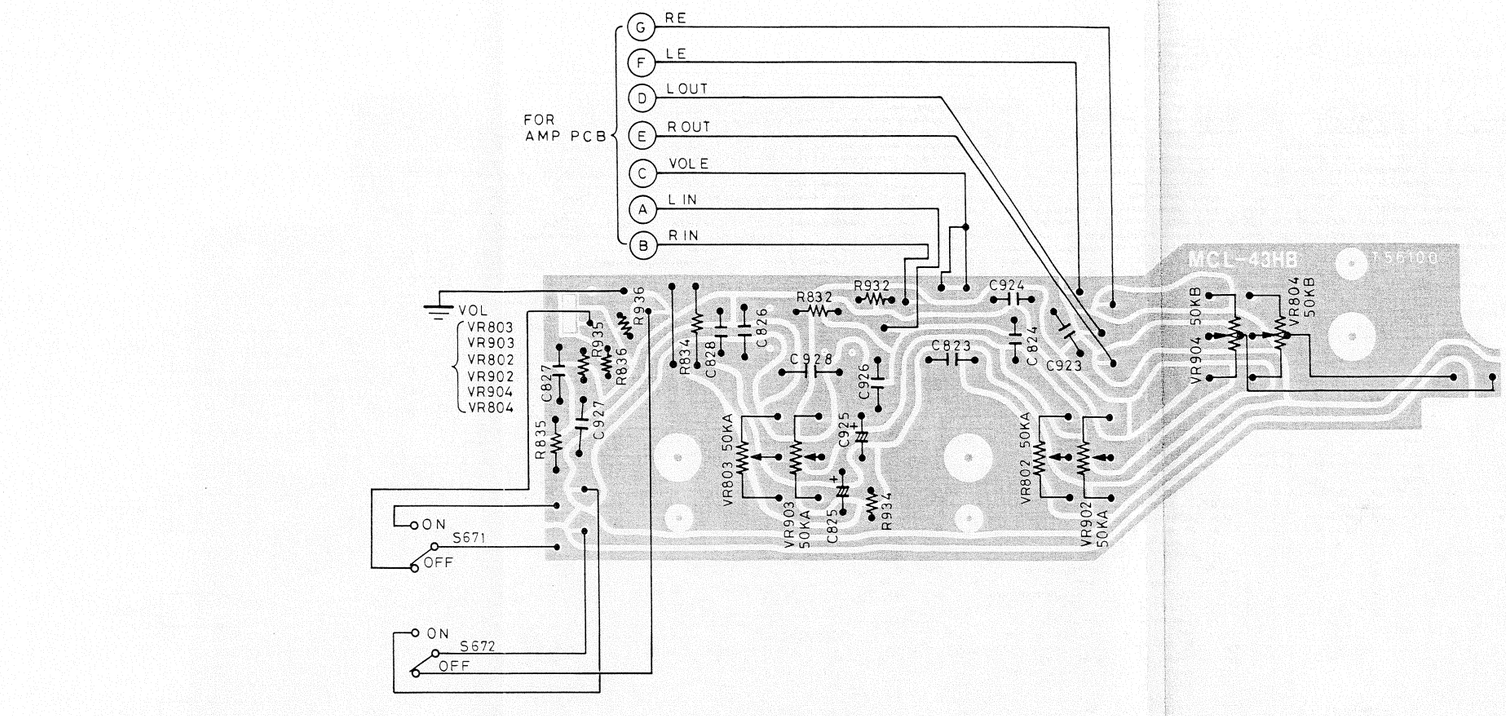
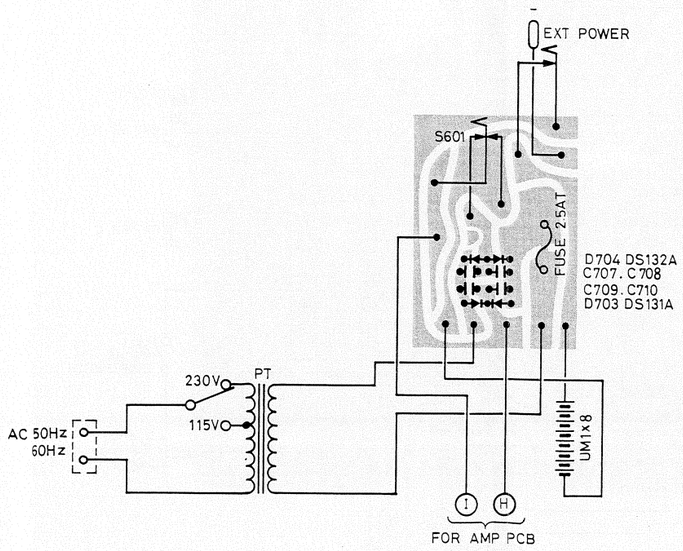
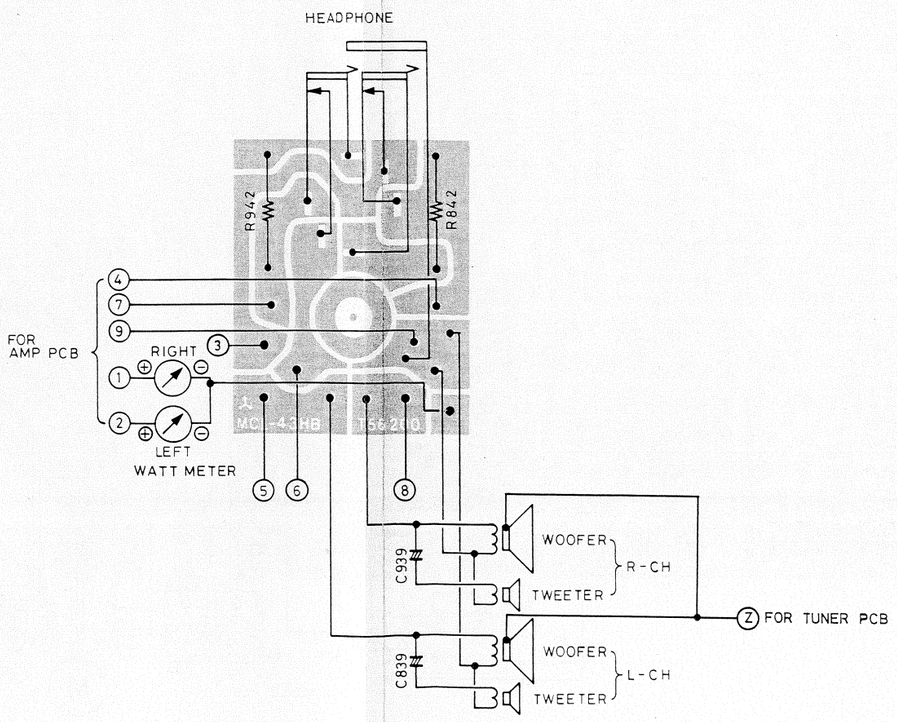
WIRING DIAGRAM (AMPLIFIER)



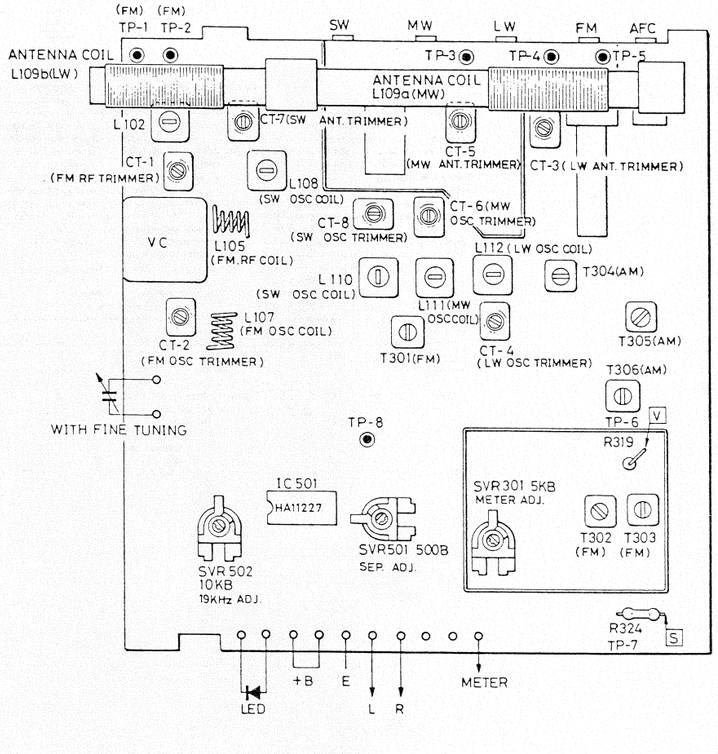
WIRING DIAGRAM







PARTS LOCATION



SANYO ELECTRIC TRADING CO., LTD.
33, Hiyoshi-cho 2-chome, Moriguchi-shi,
Osaka-fu, 570 JAPAN

Aug/'78/1300 SI Printed in Japan